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Economic Impact Study of Lincoln, Montana

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PLANNING SURVEY SECTION

In Cooperation With

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

Aerial view of Lincoln, Montana with Highway 20 passing through.

Acknowledgment

The Carroll College Research Team would like to express its appreciation to all who participated in and contributed to this study. The excellent cooperation and advice provided by the Montana State Highway Commission and the United States Bureau of Public Roads proved invaluable.

Gratitude is also extended to the various Federal, State, County and Municipal agencies, and the many private institutions, companies, and individuals who were helpful and responsive to requests for information.

A final and special word of "thanks" is given to the people of Lincoln, Montana, on whose town and community this study is focused. Their friendly reception of and help to the Research Team was of immense value in making this study a success.

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Preface

In June 1965, the Montana State Highway Commission, in cooperation with the United States Department of Commerce, Bureau of Public Roads, authorized Carroll College of Helena, Montana, to have its Economics Department conduct an Impact Study of the town of Lincoln, Montana in connection with State Highway Montana 20 which was officially completed in 1958.

The primary purpose of this six-months investigation was to determine and analyze all pertinent economic and social indicators and other interrelated factors which have reacted and will continue to react on the Lincoln community as a result of the Montana 20 highway facility.

In conjunction with this, the economic history of this region was to be explored and correlated with the development of the community, particularly with regard to transition of industry and other economic activity prior to the advent of the highway program.

Coordinated with the primary aim was the assessment of other highway benefits accruing to users which ultimately translate to the benefit of Lincoln and the surrounding community.

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Lincoln, Montana Economic Impact Study

SUMMARY OF INVESTIGATION

Although it was placer gold of the 1860's which placed Lincoln on the map, it came to be another form of "wealth" which has kept this town on the map and provided it with a foundation for growth and prosperity. This latter form of wealth has been the incalculable benefits derived by the Lincoln community by virtue of the Montana 20 highway facility.

This study shows that prior to the development of Montana 20, the town of Lincoln was in economic and social obscurity. It was the highway construction program itself which provided the initial leverage for Lincoln's economic and social development.

After completion in 1958, Montana 20 formed the arterial link for central Montana traffic routing through Great Falls via Lincoln to Missoula. This placed Lincoln in the commercial millstream which has been building ever since as evidenced by the increasing annual traffic volume. This route also provided access to the Lincoln forest-recreation area which resulted in a continuing increase of tourist traffic. This is brought out by the statistics compiled and evaluated in the "after" phase of the highway program.

The development of the lumber industry is also discussed as it relates to the highway facility.

A cost-savings analysis is made of this route in comparison with the alternate Helena route which would have to be traversed if Montana 20 were not available.

In seeking some of the more elusive yardsticks with which to measure impact, difficulties were encountered. Lack of records, dimmed memories, transient ownership and changes in tax collecting procedures were some of the problems encountered. In addition, the hazard of disclosure was always present because of the paucity of enterprises. In a small community such as Lincoln, there are not 200 barbershops, 300 service stations, 150 food markets. In many cases, ONE is all that exists in some of these categories. To complicate matters, often dual enterprises co-exist.

Regardless of the difficulties, enough information was obtained in many key areas to prove the effects of the highway on the economic and social posture of the community.

INTRODUCTION

1. Highway Impacts

Although impact studies involved with the econometrics of community development associated with highway programs are of recent vintage, "impacts" resulting from highway use have long been recognized by society.

From time immemorial the highway and its various manifestations—the trail, the road, the trade artery—have been considered as vital economic and social conduits which have contributed to the growth and prosperity of remote communities and regions. In fact, implications of highway use have been national in scope.

Regardless of today's sophisticated marvels of highway engineering as evidenced by vast networks and efficient systems typifying the American scene, the developments of the past—even the remote past—cannot be disregarded or minimized. In this technological area, the accomplishments of the ancient Romans were significant if not monumental and have withstood the ravages and deteriorations of time. Many of these ancient arteries are still in use today and continue to impact society by virtue of that use. Schreiber, who made a historical survey of the major roads of nations and societies, credited the Romans with the development of the first man-made road system. He commented on their remarkable achievements:

> If one considers that first class Roman roads alone cover a distance of twice the circumference of the earth, and all the roads built by the Romans would stretch ten times around the equator, one would have some conception of the vastness of the subject I am endeavoring to cover in one chapter.[1]

To the Romans, however, the prime purpose and use of their highway facilities were military and political in nature, serving to expand and consolidate the Empire. But the economic significance of their road systems was not to be overlooked since they served to promote commercial enterprise in distant areas of the Empire and established important trade links with other parts of the world. The "impact" of a highway was already known to them and has been often connoted by the famous expression, "All roads lead to Rome." In this light Schreiber said:

> The Romans were first to recognize that a road is worth as much as the individual places it connects. A road between two towns is only of importance to those towns.[2]

To modern American society, however, the highway has become a way of life and a symbol of a mobile people—people who spend a considerable portion of their whole spectrum of life—from being born by virtue of a highway or road facility leading to a hospital, to being carried away to the cemetery in a hearse. It includes all activities relating to employment, recreation, education and social-domestic functions. Even when not suspended on an air cushion within a rubber envelope, peoples dependence on and socio-economic orientation toward a highway of one form or other is unavoidable in this computer age of specialization. Regardless of where they are located, whether in a small hinterland community such as Lincoln, Montana, or a vast metropolis such as Chicago, Illinois, people's reliance on a road or highway is complete.

Highways which are producers of impact on people, communities and regions, have often been regarded as production facilities, i.e., they extend their plant capacities to all termini for the production of transportation of people and commodities to all areas within their access. Consequently, highways, which have more manifestly contributed to the growth and unity of our national society have, in a microeconomic sense, vitalized remote and isolated communities and enriched and dignified the lives of their residents through the impact mechanism.

Not all highway impact benefits should be construed entirely in economic terms and measured by dollar standards. Nor should they always be reconciled on a costs versus benefits-derived basis. Many of the positive attributes of these facilities are latent, indirect and long term and cannot be readily assessed. The social benefits are incalculable and yet realistic. Cultural benefits are indelible and cannot be overlooked. Apropos of this DeVoto said:

> A highway is not only a measure of progress, but a true index of our culture. Take the machinery that enables us to bridge a river which up to now had to be ferried, or to cut twenty miles of the distance from Here to There by taking the road easily through a tunnel whereas before it had to twist tortuosly through a mountain range. It embodies developments in technology, invention, industrial progress, education, finance, and so many other things that our whole cultural heritage has gone into producing it.[3]

Social progress and improved living conditions which have now become characteristic of rural and out-of-the-way areas are certainly annexed to and the result of highway developments. Thiel commented hereon:

> Highways are having a profound influence on living conditions in rural areas. Changes in rural life patterns, attributable in part to improved highway transportation, include wider opportunities for nonwork activities, increased opportunities for off-farm employment, and a general improvement in our upgrading rural areas as places in which to live.[4]

He further added:

> That the attractiveness of a rural area as a place to live should be enhanced as a result of improved highway service seems only natural, and this development has been noted in several instances. In Montana, for example, a road improvement was rated by 78 percent of the farm people queried as making the farm home a more pleasant place to live. Among the specific advantages referred to by the Montana farmers were: (1) ease in visiting other farms, (2) elimination of dust, (3) easier marketing and buying, (4) improvement in schoolbus roads, (5) easier commuting to college, and (6) faster service in emergencies, such as medical visits.[5]

Highway impacts, therefore, are a composite of many things and relate to various modes of use. Most investigations, while primarily concerned with economic criteria and yardsticks, cannot "bypass" social transformations and future trends. What has happened, is happening and will happen to people in any given community by the welcomed approach or the dreaded imposition of a highway development must be appraised in the human scale of values. Here, the trepidations, anxieties and hopes of the people affected must be given consideration and cannot be ignored in face of economic expediency.

2. Approach and Procedures Employed

Where a small community has existed for a reasonable period of time without material change prior to the advent of a highway program, it will usually lend itself to appraisal by the "before and after" technique, provided an adequate population base was present. Of course, the existence of taxable retail sales would be a feasible yardstick that could be relied upon for exhibiting past trends and projecting future tendencies of the potentially "impacted" area. Therefore, the most practical approach to such a study would be to first ascertain the pertinent indicators (most of which fall into the taxable retail sales category), gather and compile the statistical data (usually available at many governmental agency sources on a nondisclosure basis), index on the highway construction period confronting the community, offset price and value distortions due to inflation, correlate and evaluate the data and trends indicated thereby, and draw up appropriate conclusions stemming from the analyses. A questionnaire survey is also included to corroborate uncertain information and obtain otherwise unavailable facts and data. Based on the foregoing, a prognosis is usually desirable and should be included since highways are generally permanent installations and designed to provide use and "impact" for many years to come.

The above method, however, was not feasible or appropriate to the Lincoln study for a number of reasons. As a small unincorporated town, which, prior to the highway development program, had a population under 100 and an uncertain socio-economic status, the necessary "before" factors were lacking. Also, since the construction period was spread over a number of decades, there was no clear-cut period on which to index. In addition, the expediency and reliance on retail sales tax data could not be employed since no such tax other than on gasoline sales was imposed in Montana. Because of the paucity of enterprises in Lincoln, the problem of disclosure restricted the amount of information which could be evaluated and reported. So far as the amount of information that could be obtained from interviewing the local citizenry, relating back over a three to five year span was unfruitful where more specific information instead of generalities was sought. Aside from a handful of long time residents whose recollections were dimmed by the passage of time (which would be normally expected), no reliable economic or even social foundation could be set for the preconstruction or early construction period. Yet all the earmarks of growth and development of Lincoln in the "after" stage were readily apparent. Such was the economic profile of this community at the outset of this study based on assessing the impact it derived from State Highway Montana 20 which was officially completed in 1958 when the light bituminous surface was completed.

In view of the above confrontations and limitations, it was decided to use an overall approach and compile data for every pertinent indicator, direct and indirect, reflecting on Lincoln's economy and social progress. In addition, wherever possible, a backtracking of all information was made to reveal trends as a result of the highway program.

Since Lincoln was already on the map before the turn of the century, a historical synopsis was in order to show transition in industry and change in social patterns. This would also serve to bring the community to a starting base in line with the ensuing highway developments.

Because of the anticipated lack of information on this small town, a questionnaire survey was conducted on a personal basis involving private households and business enterprises.

With regard to a reference point to show social and economic trends of the community, the year 1958—marking the completion of the highway—was used and carried the denotation of the "after" period.

From the standpoint of preliminary organization, it was practical to have the investigation divided into phases as follows:

Phase I.	Historical Background of the Lincoln Area
Phase II.	Significance and Development of Montana 20 and the Central Highway System
Phase III.	Economic Impact and Socio-economic Ramifications of Montana 20 on the Lincoln Community
Phase IV.	Conclusions (Final Report)

Since the study embraced a six-month period starting in June, it was important to pursue the field investigation as quickly as possible over the short-lived summer period since there is no prolonged fall season and winter, particularly in the Lincoln area, sets in early. Thus, it was advantageous to complete as much of Phase III as possible.

Phase I was also important to the early part of the investigation because it would help to establish rapport with many in the community who were interested in the historical development of their town and who might have information to contribute. It was found that the admixture of such information with the business queries helped relieve the formal business atmosphere and made the interviews more sociable.

A tabulation and checkoff of other primary data sources were made for information sources located in Lincoln and other areas. This consisted mainly of governmental agencies and departments (Federal, State, County), companies, associations, institutions, etc. which were to be contacted during the course of the investigation. This is presented as Table I in the Appendix.

In accord with good public relations and to prepare and acquaint the people of Lincoln with the proposed study concerning their town as it related to the Montana 20 highway, representatives of the Montana Highway Department and the Bureau of Public Roads arranged a meeting with the leading citizens and businessmen of the town. It was the purpose of this meeting to introduce the Carroll College research team, to set forth the scope and objectives of the study and to ask for the cooperation of the people, particularly in connection with the pending interviews.

The meeting was a success with full attendance of the leading residents. Amid a friendly and informal atmosphere interest was indicated in the highway project which was evidenced by a prolonged question-and-answer period following the effective discussion concerning Montana 20 and Federal-State highway programs.

3. Location and Description of Lincoln, Montana

The town of Lincoln, elevation 4,800 ft., population of approximately 400, is located in the North District area of the Helena National Forest (refer to Exhibit 9) in the county of Lewis and Clark, Montana. It is located on Highway Montana 20 west of the Continental Divide, almost at a midpoint between the cities of Great Falls and Missoula. It is situated about 65 miles northwest of Helena, the capitol of Montana, and can be reached from that city via route 279 over Flesher Pass (elevation 6350) or through an alternate route over Stemple Pass (elevation 6373).

Industrywise the economy of the town and community is primarily sustained by the lumber industry and tourist-recreation activities which reach their peak during the summer, although the fall hunting season has also added to the economy. Mining is currently latent, but may have future potential for the area.

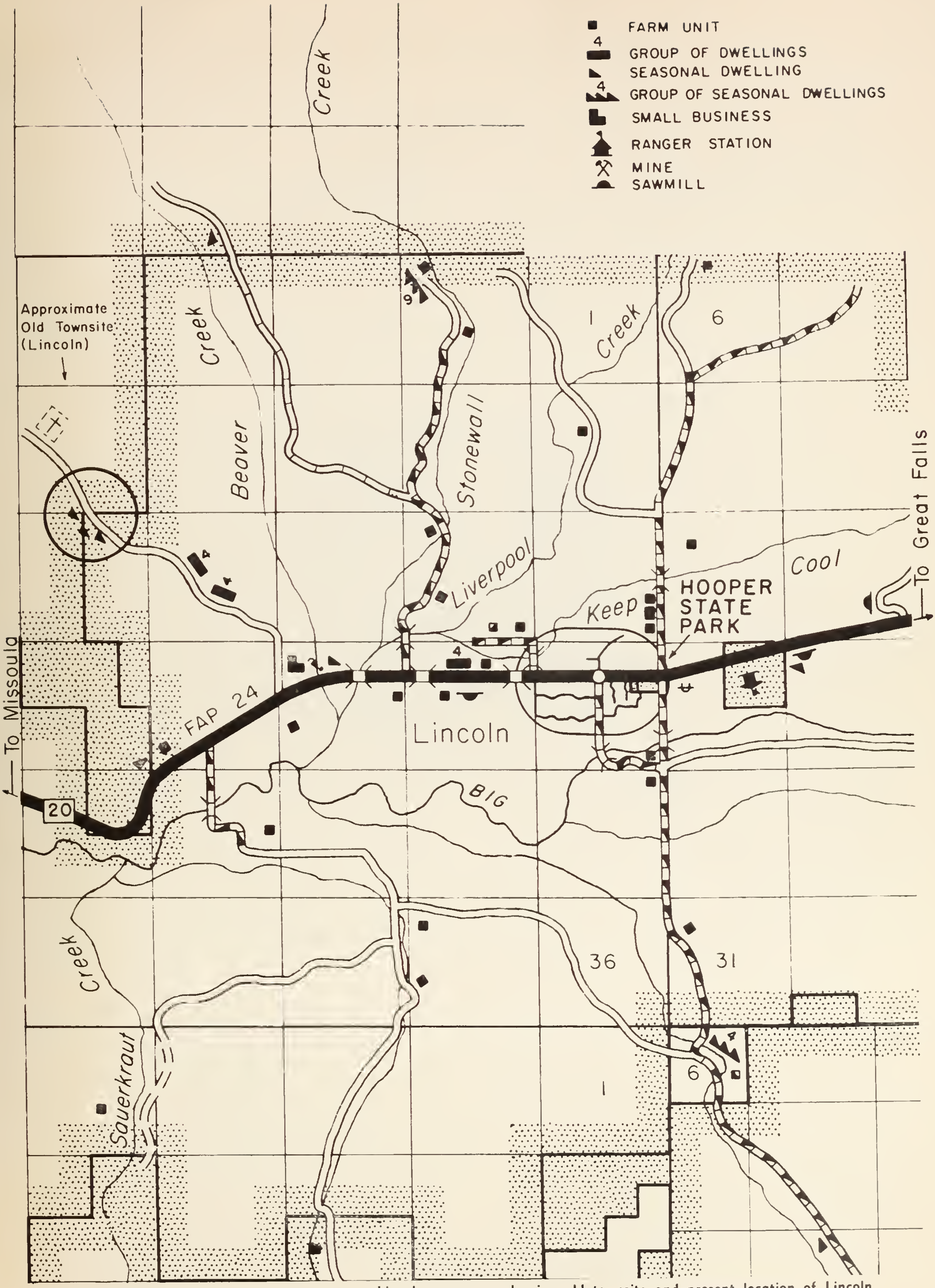


Exhibit 1. **Lincoln area map showing old townsite and present location of Lincoln.**

David W. Culp, founder of "old" Lincoln in 1865.

HISTORICAL BACKGROUND OF THE LINCOLN COMMUNITY

Lincoln stems from the Montana gold rush of the 1860's and in many ways parallels the history of Virginia City whose history has been more widely publicized. The growth, prosperity and decline of these communities coincided with the amount of gold production in their respective areas.

The focal area—which could be regarded as the original townsite of Lincoln—was Lincoln Gulch, some four miles west of the present town and to the north of Montana 20 (see Exhibit 1). Gold, in the form of placer deposits, was discovered by D. W. Culp (see Photograph 1) as well as others in 1865; and in honor of the President the discovery was named "Lincoln Gulch."[6]

The first winter was a matter of survival. By the summer of 1866 news of the discovery had spread and the entire area was a mass of human activity as mining tents and log cabins mushroomed. Mining structures and facilities (shafts, sluices, sifters, etc.) were hastily constructed to get at the pay streak. By the fall of that year miners were averaging five dollars to the pan with more exceptional cases getting from fifteen to twenty dollars—while the pay streak had just been scratched.[7]

By 1867 the yields had become progressively better as the pay streak was penetrated. The following describes this high yield gold bearing gravel:

> The pay streak was from 30 to 300 feet wide and averaged at least $375 to a set, which was a block 4 feet wide, 4 feet high, and 10 feet long. Some spots were very rich, as much as $2,400 being yielded by a single block. Above the drifted grounds the gulch was mined for about a mile by open pits or ground sluicing.[8]

Prosperity was evident as the community grew. An excerpt from the May 4, 1867 edition of the Montana Post reads:

> Our town situated on Numbers 4 & 5 claims comprises five log houses, three whiskey and bakery shops and one store. Saloons are running day and night. Our excellent expressman James H. Kennedy, has made regular trips through the long and severe winter and kept us posted with the outside world.[9]

In 1868 the influx of miners continued as the yields continued to be high. Thompson's sawmill was started and produced about 4,000 feet per day of much needed lumber.[10]

Notoriety of the community—unlike others affected by the gold rush—was minimized as reasonable law and order prevailed. This social stability was attributed primarily to the mining laws which were adopted in 1865 and continued to be upheld during the years the camp operated. Ultimately many of these rules were incorporated in the mining statutes of Montana.[11]

By 1869 Lincoln Gulch was populated by about 500 people. It had reached the peak of its prosperity. A hotel and several stores were in operation. The stores were well stocked since several freight teams had come to serve the area. Regular and express lines were serving the area between Lincoln, Blackfoot, Deer Lodge, Cable City and Philipsburg on a triweekly basis.[12]

The year 1870 marked a turning point as mining operations started to decline into diminishing returns. About 600 people had come to the area but the subsequent decline in population was rapid as mining profits started decreasing. The cream of the pay streak was depleted. By 1873 only about 60 people were estimated to be in the gulch; and in many instances, barely enough gold could be mined to pay wages.[13]

Other factors also contributed to the decline of the community. The foremost of these was the threatened invasion by the Nez Perce Indians of Idaho who made their migration to the buffalo hunting grounds which were not too distant from Lincoln. Consequently, the last efforts of the remaining miners were diverted toward building a fort for the protection of the population.[14]

By 1879 it had become apparent there would be no revival of prosperity and the remaining investors disposed of everything movable they possessed. Work in the gulch had virtually come to a halt. By the turn of the century the original townsite was a forlorn area of tumbledown cabins amid mining pits overgrown with trees and bushes. Further up the gulch a neglected cemetery—obscured by the natural processes of the wilderness—still preserved some historical identity of the old mining camp.

What had come to represent Lincoln was a small hamlet about four miles east of the old campsite (see Photograph 2). Placer mining was a thing of the past for this region whose abundant forest resources indicated the future development of a small scale lumber industry.

The last historic effort to placer mine the gulch was started by the Landstrum Company in 1904 and continued for several years. However, no records are available concerning this enterprise except mining references which mention that they tried to mine some of the undrained gravel in the lower part of the gulch by means of a long tunnel. The theory holds that the pay

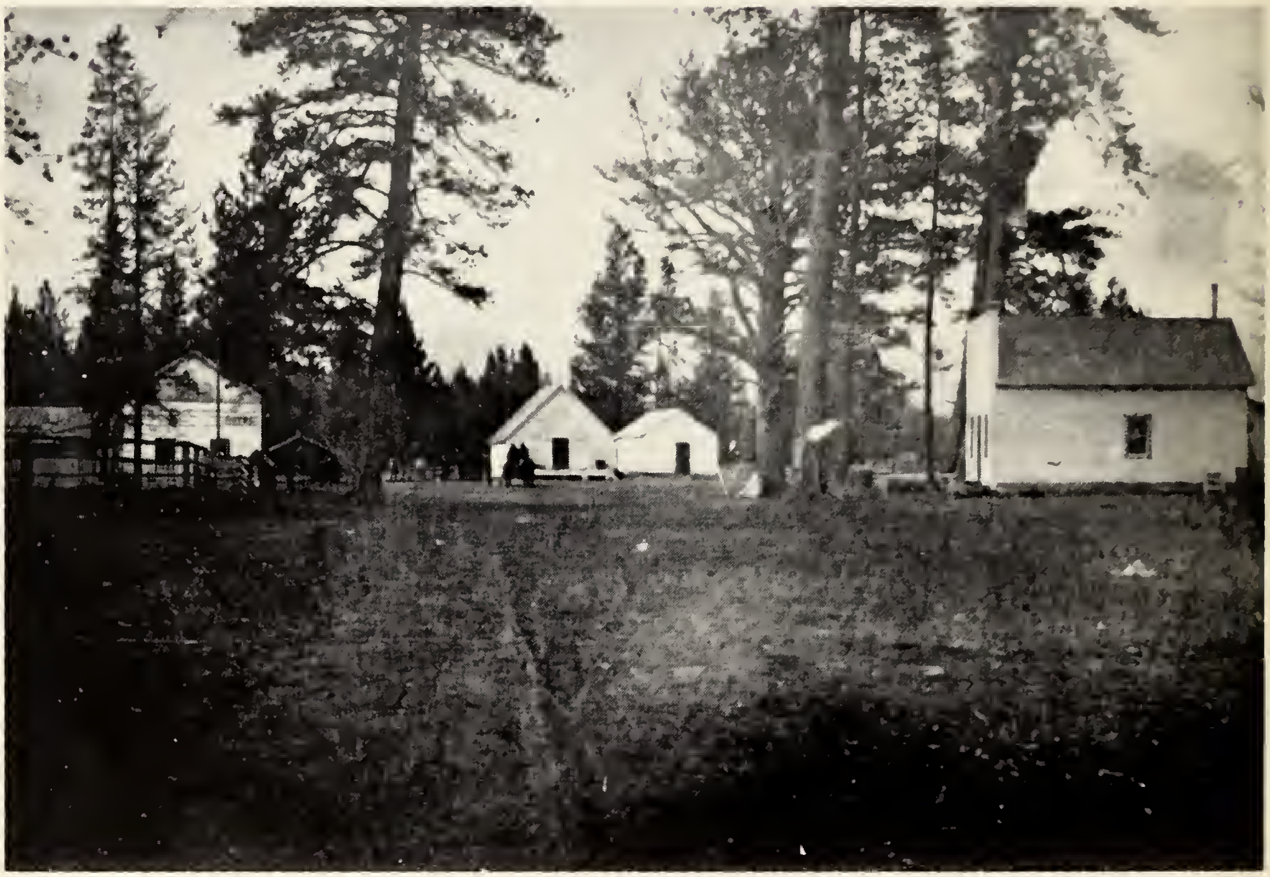


Photo No. 2

Town of Lincoln in 1878.

streak probably had been worked and exhausted at relatively low depths but had not been tapped in this vicinity because it was deeply submerged. Presumably, subsequent dredging of the area was effected.[15]

Over $7,000,000 in gold was estimated to have been mined in the "Old" Lincoln Camp. This gold is claimed to have been of an unusually pure grade, worth about $19 an ounce. Most of it was in the form of particles, called "dust", (nuggets were rare and not characteristic of this type of discovery). Gold dust by the geological scale of time, was created by processes of erosion of lode deposits of gold.[16]

Although placer mining has long ceased in this vicinity, gold and other forms of lode mining have been carried on, but on a very small scale. (Refer to section on Mining Industry below.)

After the turn of the century, the profile of Lincoln was modified from a defunct mining community to a small hinterland recreation and vacation resort for the urban population of nearby Helena, Montana. A small scale lumber industry was in operation and provided some leverage for the economy of the town. The 1939 State Guidebook of the Federal Writer's Project, cited the following:

> Lincoln (4,800 ft. Altitude, 25 population) in a forest of Montana's largest pines, is buried under heavy snows in winter. In summer it is a place to which citizens of Helena come for rest and quiet. The stores and post offices are in a clearing among the yellow pines, with summer homes in the woods around them. It was once important as a placer mining camp but only small operations are carried on in the vicinity. It is a popular point of departure for fall hunting parties and summer fishermen.[17]

No dramatic change was to affect the above complexion of the town until the early nineteen-fifties when Montana 20 construction activities began to revitalize its economy and bring it into exposure for commerce and the traveling public.

MINING INDUSTRY

The mountainous terrain and intermontane valleys typifying the Lincoln study area and surrounding regions would indicate the presence of extensive mining activities, but as has been mentioned in the historical background of Lincoln, no significant events had occurred immediately after the turn of the century.[18] Despite numerous mines in this region and the large number of claims filed and worked every year, the mining industry around Lincoln had remained dormant for at least two decades.

Actually, the Lincoln community is but a small part of a 3,000 square mile region surrounding the city of Helena. This area, as depicted on Exhibit 2 is classed as the greater Helena mining region.[19]

In excess of $280,000,000 is estimated to have been mined in this area prior to 1930. As far back as the turn of the century placer mining was exhausted in this region but there was an abundance of mineral wealth left in the form of metalliferous lodes to be discovered, developed and produced on an economic basis.[20]

The industrial mining potential of the Lincoln area —especially in the vicinity of the Continental Divide— has long been recognized. Pardee and Schrader, who had made a survey of this region, commented:

> Other districts, mainly those north of Helena, have not been explored beyond shallow depths, and the lower limits of their ore bodies are not known. These districts promise an additional future production. In other places throughout the region are large bodies of material that contain just enough gold or other valuable metal to be, under present conditions, near the border between ore and waste. With improvements in metallurgy or other changed conditions these bodies might become profitable to work. Although the region cannot expect to regain the prestige it enjoyed while the cream of deposits were being skimmed, it may be reasonable to look forward to rather long-continued mining activities on a moderate scale.[21]

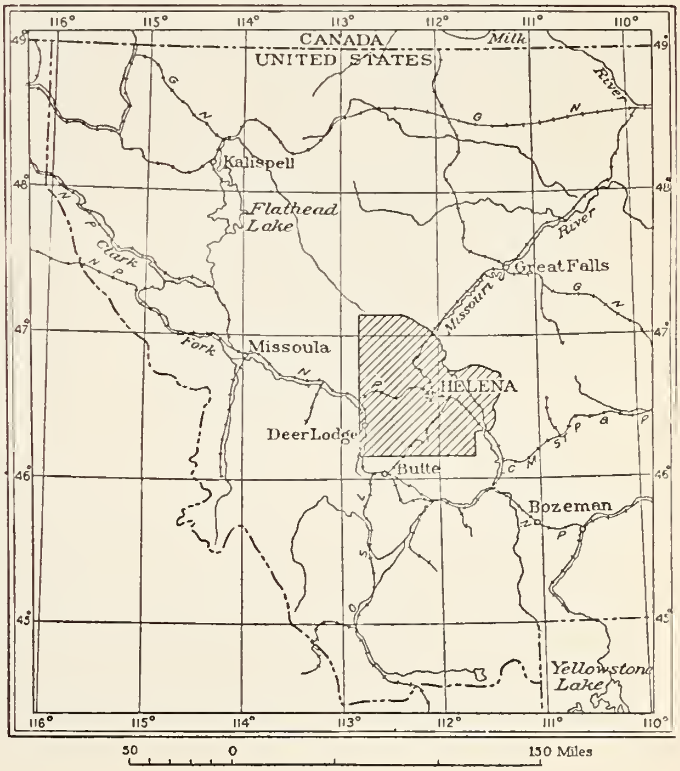
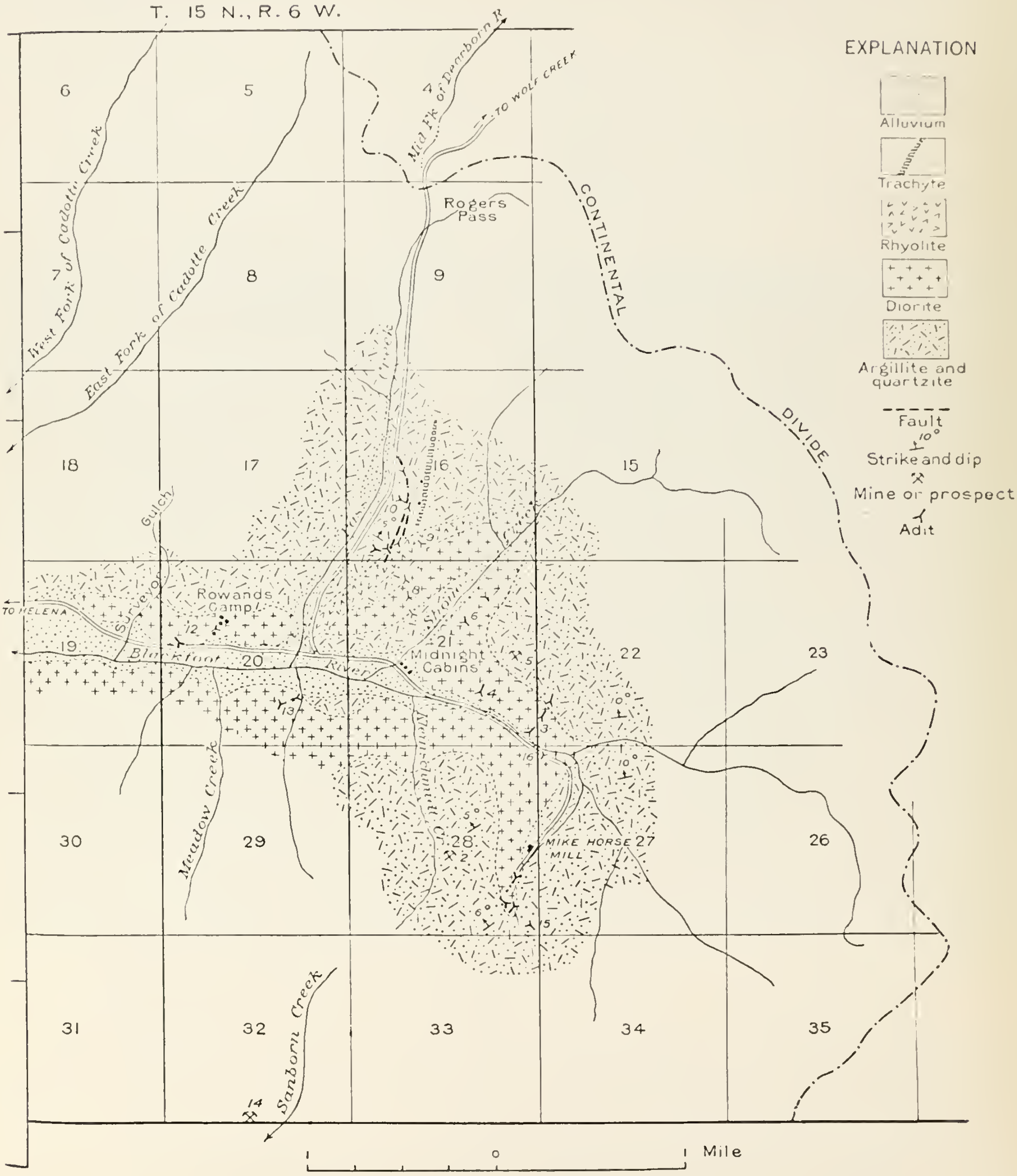


Exhibit 2.

The Greater Helena Mining Region (shaded area).

U. S. GEOLOGICAL SURVEY BULLETIN 842 PLATE 12



GEOLOGIC MAP OF THE HEDDLESTON DISTRICT

Mines and prospects: 1, Mike Horse; 2, Kleinschmidt; 3, Anaconda; 4, Iron Hill; 5, Skyscraper; 6, Consolation; 7, Rex Beach; 8, Midnight; 9, Calliope, 10, Milliron; 11, Carbonate Hill; 12, Carbonate; 13, Paymaster; 14, Oker; 15, Hogall; 16, Red Wing; 17, Eureka.

Exhibit 3

Undoubtedly, in reference to "other changed conditions" these authorities included improved road conditions which would reflect in lower transportation costs. In many instances where mining operations were located in areas less accessible to smelter plants, production had to be curtailed due to the prohibitive cost of transporting ore. Thus, in discussing production in the Blackfoot Valley (Lincoln vicinity) these same authorities said:

> The present costs of hauling discourage the shipping of ore and concentrate of the grade so far produced. However, a railroad may reach the Blackfoot Valley in time to benefit the district.[22]

Up to the present no railroad has been extended to accommodate this region which remains inactive. But the potential use of Montana 20 has caused a reassessment of industrial mining in the area.

In the early nineteen-twenties there was some semblance of mining industry near Lincoln—in the area of the Blackfoot Valley called the Heddleston District. This comprised a number of mines located on the west side of the Continental Divide (refer to Exhibit 3). Dollarwise, their total production was insignificant when compared to the output of the greater Helena region.

The Mike Horse, one of the more outstanding mines of this group, did have some leverage on the economy of Lincoln (see Photograph 4). Discovered by Joseph Heitmiller in 1898, the mine shortly thereafter became the property of the Sterling Mining and Milling Company. From a production standpoint, however, the mine remained inactive for many years as revealed by Pardee and Schrader:

> In the next 15 years more or less development work was done, but owing to the lack of suitable roads no large amount of ore was shipped out. A small production was reported in 1915 and again in 1917. In 1919 a mill was built and $6,000 worth of lead-silver concentrate was reported to have been produced.[23]

The years 1923 and 1924 were regarded as the most productive years for the Mike Horse whose major veins (refer to Exhibit 4) produced ore of sufficient grade to offset the attritional costs of transportation. The following passage is descriptive of the yields obtained:

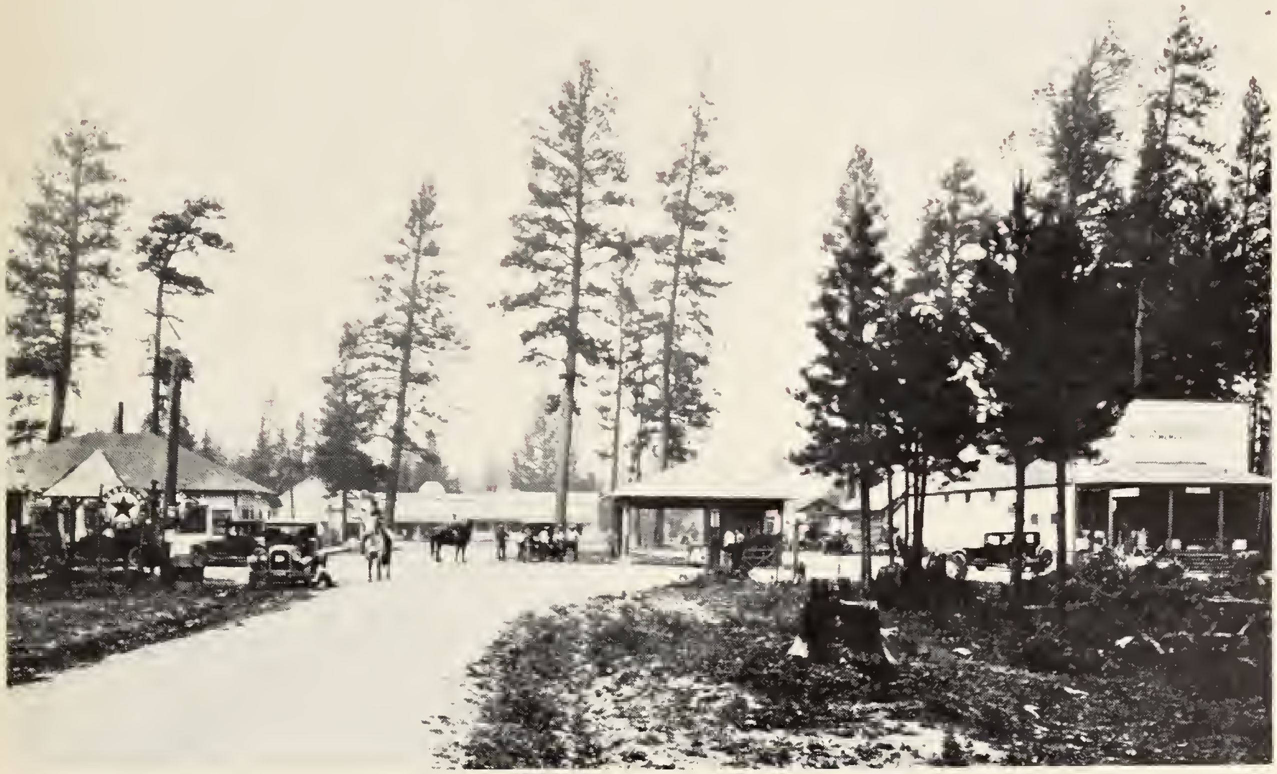


Photo No. 3

The town of Lincoln in the early nineteen-twenties when the Mike Horse mine was at its peak (view is from the north toward the center of town).

Returns from the East Helena smelter for concentrate produced at the Mike Horse Mill in 1924 show the following averages: silver 19.56 ounces to a ton, lead 42.69 percent, zinc 14.08 percent. Shipments of a crude ore averaged 13.66 ounces of silver to the ton, 30.54 percent lead, 13.65 percent zinc. The average net return from the smelter during 1923 and 1924 was $46.05 to the ton.[24]

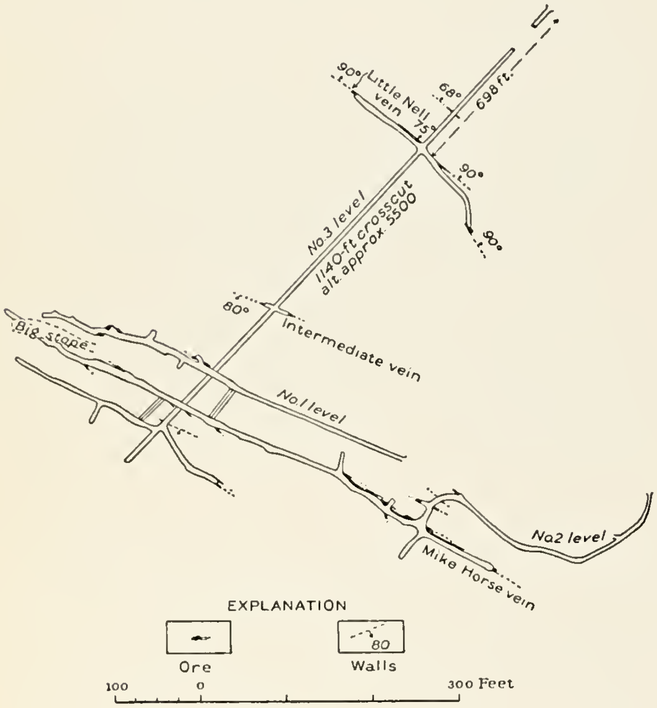


Exhibit 4.

Workings in Mike Horse mine.
From map by L. S. Ropes, 1923.

This period of profitability was of short duration. When the ore grades became poorer, production operations had to be suspended until richer veins could be tapped. During the depression and over the ensuing years the Mike Horse was operated on a sporadic basis until it shut down after World War II.

At present, two major companies are carrying on extensive exploratory operations in the Lincoln vicinity. One activity is centered around the Mike Horse area (refer to Exhibit 5). This is evidenced by the visible (and audible) drill-rigs operating on the mountain sides, new access roads cutting across the hillsides (see Photograph 5), and the movement of men and equipment to and from operational sites. The number of work crews and supervisors stationed in and commuting to work from Lincoln is also apparent.

While no specific nor conclusive information could be obtained concerning this stepped-up activity (particularly unusual during the generally severe winter season), some of the residents close to the scene intimated that sizable deposits of high grade ores, rich in copper and silver, were possibly on the verge of discovery. Such an assumption would not be unrealistic in view of the mining geology of this area where the association of these two metals is quite common and where large deposits had been predicted for some time. Pardee and Schrader have commented on the potential of the Mike Horse:

> Considering the size and continuity of the Mike Horse vein and the shallow depth to which it has been explored, it seems reasonable to expect other ore bodies beyond the horizontal and vertical limits of present workings. A change in general tenor of the ore is probably not to be expected in depth except possibly an increase in zinc and copper. The occurrence of copper and bismuth, accompanied by increased amounts of silver suggest an ore shoot worthy of deeper exploration.[25]

Relative to the above developments, other people anticipate another "Butte Hill" and relate the scope and tempo of these explorations with the current shortage of silver and copper.

Properties within the Lincoln townsite, particularly lots fronting on Montana 20, have risen in value and it would not be unrealistic to relate this to anticipation of a revived mining industry.

Undoubtedly, the revitilization of mining in this region would, with the dependence on the Montana 20 highway facility, invigorate the economy of the entire area thereby making Lincoln the center of impact.

LUMBER AND LOGGING INDUSTRY

1. Forest Resources

Since Lincoln is located in the most productive portion of the Helena National Forest (refer to Exhibit 6), it would be presumptive that the lumber industry

Photo No. 4

Access road in the vicinity of the Mike Horse mine.

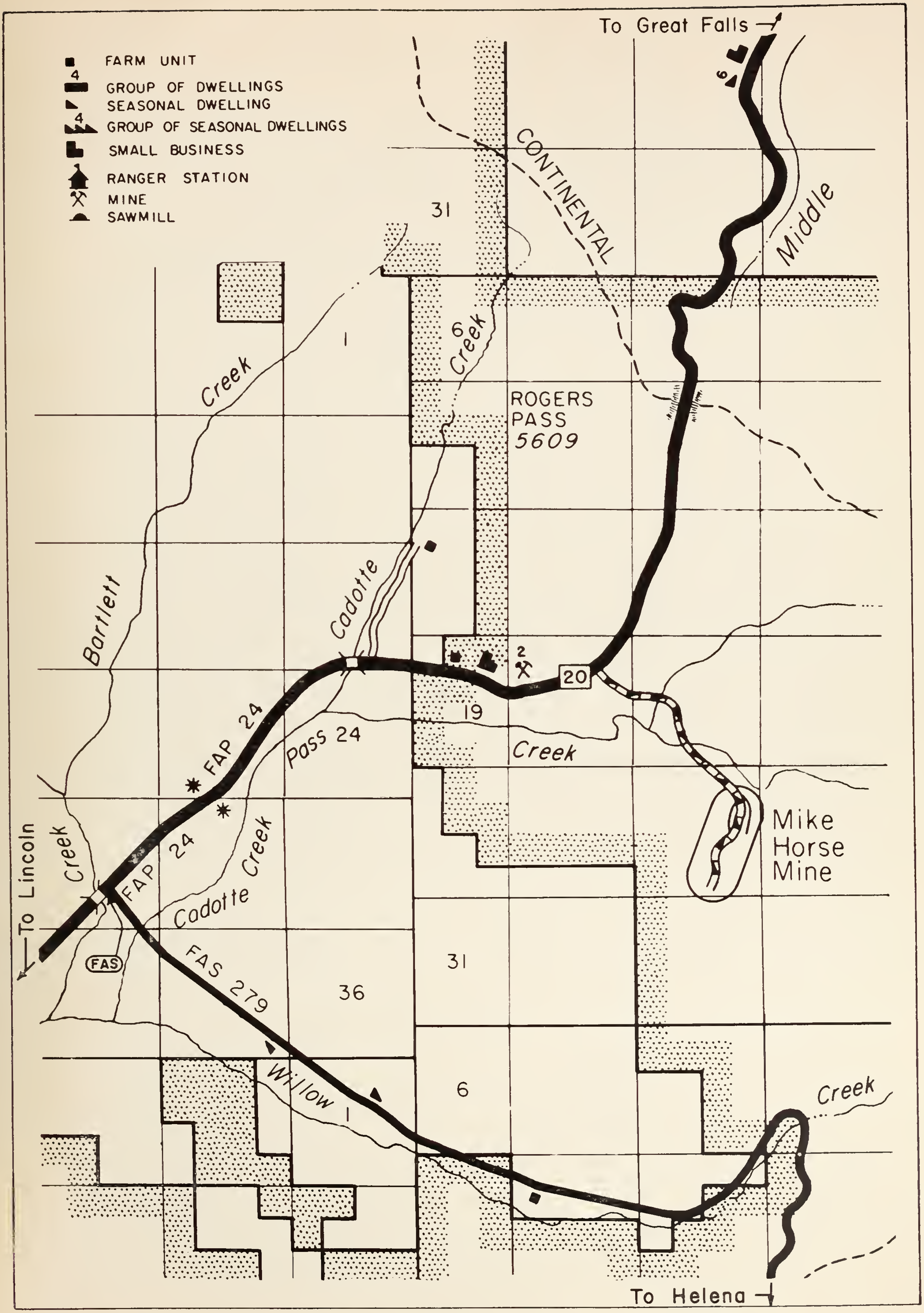


Exhibit 5. Location of Mike Horse Mine relative to Montana 20 (FAP 24).

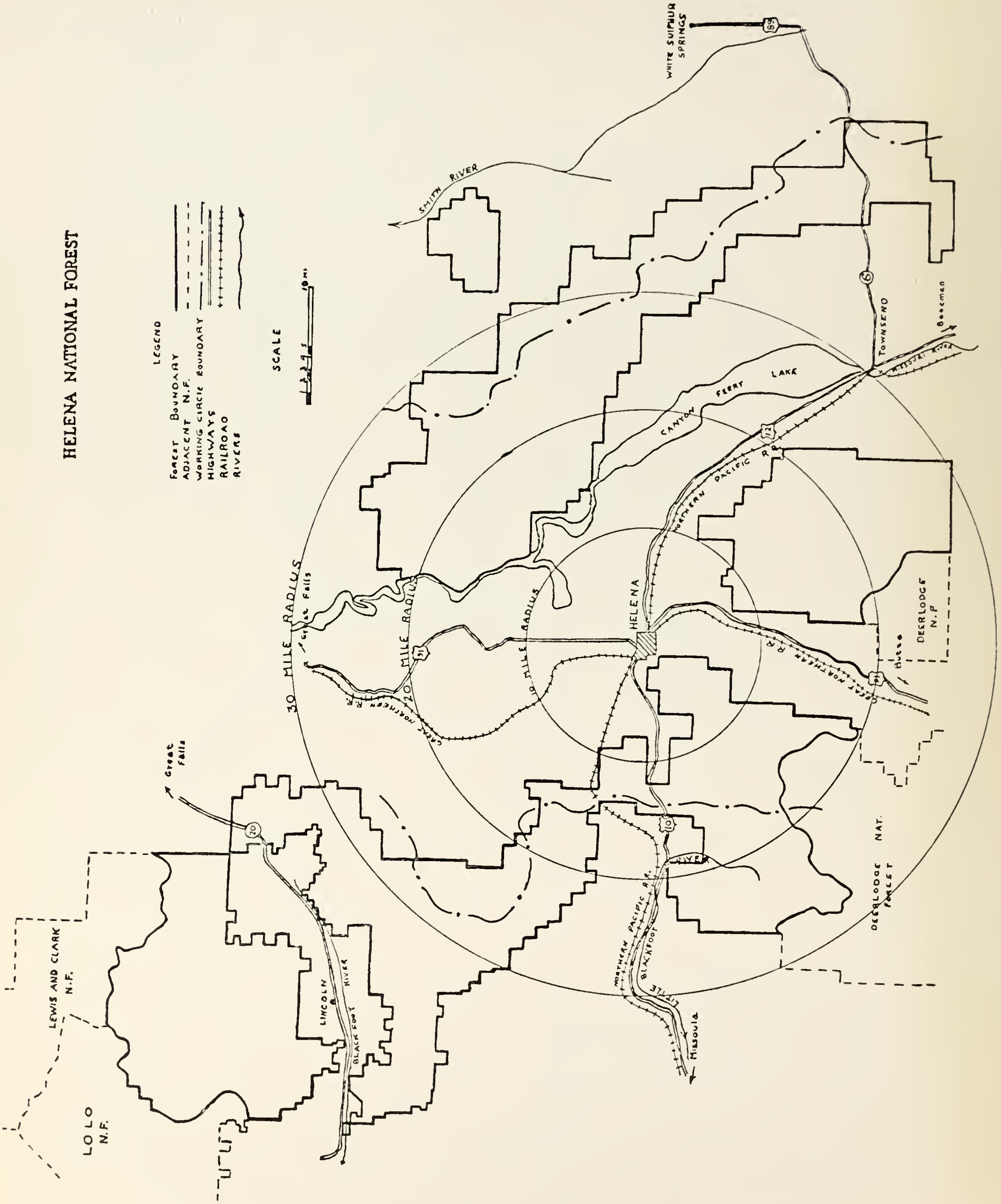


Exhibit 6.

Map of Helena National Forest showing Lincoln district.

would constitute the heart of its economy. But not until recently and due mainly to the efforts of the United States Forest Service, has the lumbering business made any strides in this region. An extract from a feature newspaper article covering the logging and recreational boom in Lincoln reads:

> It is the Forest Service, plus the new highway between Great Falls and Missoula, which has brought Lincoln out of the backwoods which for years kept it isolated.[26]

The Helena National Forest—formerly the Helena Forest Reserve—is located in central Montana and is one of the sixteen national forests comprising the Northern Region. In 1906 it was set aside by President Theodore Roosevelt, and has since been divided into belt regions and districts spanned by working circle areas,[‡] of which Lincoln forms an important portion. The Lincoln and Helena working circles, as well as the Big Belt blocks of the Belt working circle are situated within the same forest.[27]

The westerly region of the Helena National Forest forms part of the natural watershed associated with the Continental Divide. The timber resources of the region are extensive. A 1960 estimate of the total growth of the Helena Forest was approximately one billion nine hundred million board feet of which sixty-seven million board feet constituted the potential harvest or what is termed as "allowable cut." Relative to the tentative sales program established by the Forest Service for the remainder of the 1960 fiscal year and a part of the 1961 year, a volume of 24 million board feet was earmarked for the Lincoln marketing area. This amount represented over fifty percent of the total tentative sales established for all districts for that period.[28]

Table 1 shows the volume of timber sold in each of the working circle areas of the Helena Forest since 1958.

Table 1
VOLUME OF TIMBER SOLD IN THE HELENA FOREST SINCE 1958

Fiscal Year	THOUSANDS OF BOARD FEET Belts	Helena	Lincoln	TOTAL
1958	....	....	....	5,251
1959	4,395	2,208	13,021	19,624
1960	903	12,708	13,033	26,644
1961	7,571	3,081	3,860	14,512
1962	3,717	14,522	49,288	67,527
1963	4,660	14,359	14,362	33,381
1964	3,421	15,569	14,851	33,841
1965	6	13,677	9,419	23,102
TOTAL	24,673	76,124	117,834	223,882

Exhibit 7 shows the secular trend in timber sales since fiscal year 1953; the sales in the Lincoln working circle are contrasted for data compiled since 1959. After 1958 a pronounced upward trend is indicative of the revival of the lumber industry in the area in conjunction with the policies and programs inaugurated by the United States Forest Service and the availability of the Montana 20 highway facility.

Table 2 shows the comparative volume of timber cut in the various working circles and the volume of revenue (stumpage) derived from sales by the Forest Service.

Table 2
VOLUME OF TIMBER CUT IN THE HELENA FOREST SINCE 1958 AND STUMPAGE DERIVED

Fiscal Year	THOUSANDS OF BOARD FEET Belts	Helena	Lincoln	TOTAL	STUMPAGE
1958	300	2,400	1,956	4,656	$ 21,300
1959	553	2,349	5,210	8,112	37,845
1960	637	2,372	9,942	12,951	67,997
1961	3,685	2,862	7,018	13,565	20,530
1962	1,647	4,916	7,203	13,766	17,650
1963	1,499	4,829	9,650	15,978	31,516
1964	4,143	5,786	13,333	23,262	33,587
1965	2,617	10,732	26,178	39,527	86,543
TOTAL:	15,081	36,306	80,490	131,877	$316,968

The revenue realized by the United States Forest Service for sold timber is termed "stumpage" and has, of course, no profit base. However, stumpage is equated to offset a number of costs incurred by the government with respect to clearing, restoring and maintaining the processed compartments of the forest. This also includes provision for access roads to and from the timber grounds and involves costs associated with conservation measures. Periodically a part of the annual stumpage is returned to the state counties as income for their schools and road building programs.

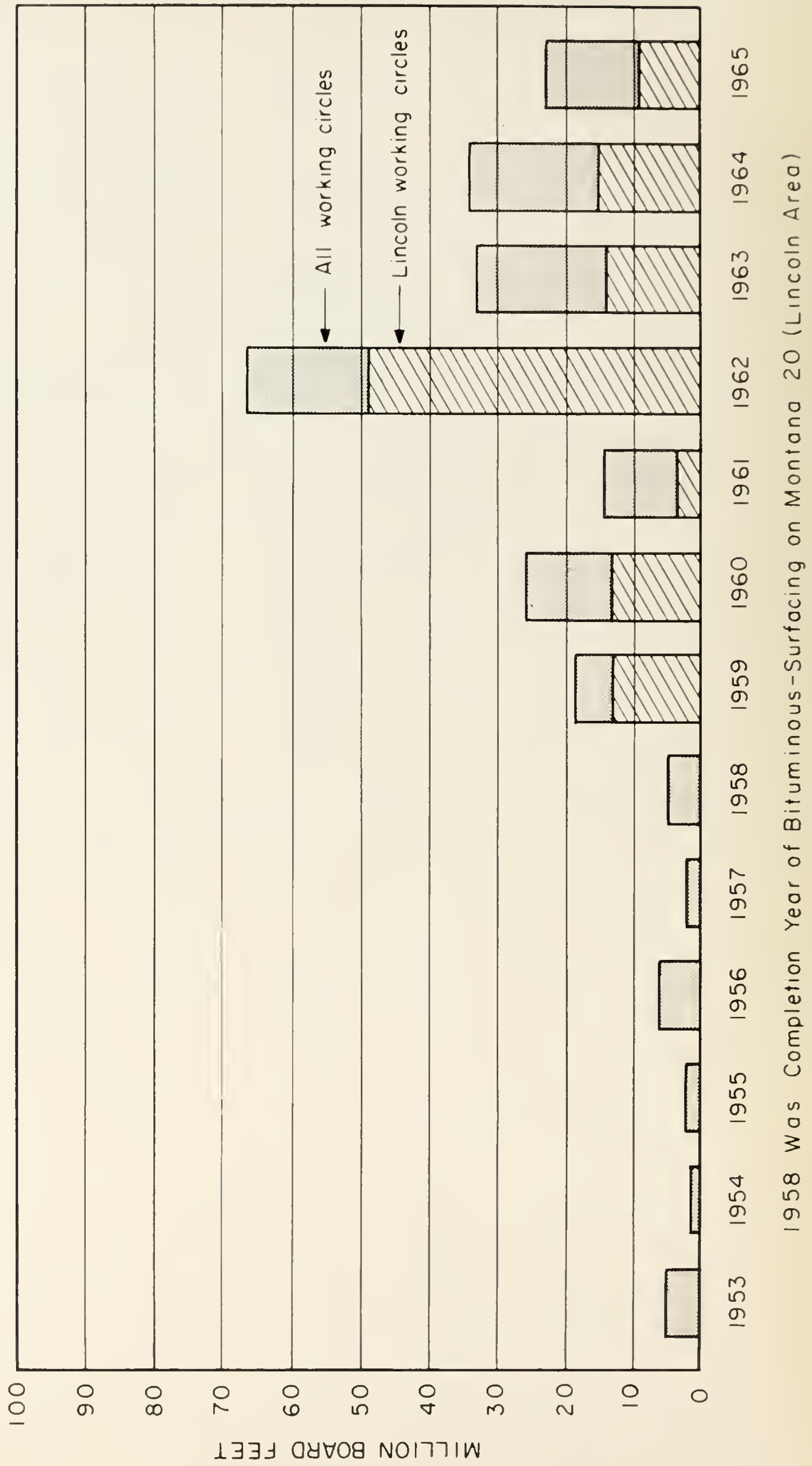
Also in conjunction with its timber management program, the United States Forest Service has alloted allowable cuts for the various districts relative to their working circle areas. Table 3 presents comparative data.[29]

TABLE 3
ALLOWABLE CUT DATA HELENA NATIONAL FOREST

DISTRICT	WORKING CIRCLE BELTS Saw-tmbr. M MBM	 Other Prod. M Cords	 HELENA Saw-tmbr. M MBM	 Other Prod. M Cords	 LINCOLN Saw-tmbr. M MBM	 Other Prod. M Cords	 TOTAL Saw-tmbr. M MBM	 Other Prod. M Cords
Townsend	1.5	4.0	3.9	7.7	....	....	5.4	11.7
Canyon Ferry	1.0	2.5	3.6	4.6	....	....	4.6	7.1
Helena	....	....	5.5	11.4	4.8	18.2	10.3	29.6
Lincoln	....	....	....	....	15.4	45.4	15.4	45.4
Total	2.5	6.5	13.0	23.7	20.2	63.6	35.7	93.8

[‡] A working circle is defined by the Society of American Foresters as a primary unit of forest management, with well defined boundaries usually based on topography, large enough to furnish a sustained yield of forest products sufficient to support dependent industries or communities.

VOLUME OF TIMBER SOLD
HELENA NATIONAL FOREST
FISCAL YEAR



1958 Was Completion Year of Bituminous-Surfacing on Montana 20 (Lincoln Area)

Exhibit 7.

Relative to conservation policy by the United States Forest Service, a perpetual harvest of trees by type is provided. This is based on "selective logging" which allots allowable cut quotas for the various type trees in the different working circles. Table 4 below shows the amount alloted in million board feet (MMBM).[30]

TABLE 4

ALLOWABLE CUT BY TYPE AND WORKING CIRCLE

TYPE	BELTS		HELENA		LINCOLN		TOTAL	
	Saw-tmbr. M MBM	Other Prod. M Cords	Saw-tmbr. M MBM	Other Prod. M Cords	Saw-tmbr. M MBM	Other Prod. M Cords	Saw-tmbr. M MBM	Other Prod. M Cords
Lodgepole Pine	.7	4.6	3.1	11.7	8.4	55.2	12.2	71.5
Ponderosa Pine	.1	....	.9	1.2	.2	.1	1.2	1.3
Douglas Fir	1.7	1.9	9.0	10.8	11.6	8.3	22.3	21.0
Total	2.5	6.5	13.0	23.7	20.2	63.6	35.7	93.8

Note: The converting factor for cords is 3 cords equal one MBM.

2. Lumber and Logging Enterprise

The lumber industry has, within the recent past, been in the doldrums due to very low profit margins because of conditions in the market and increasing costs. This situation has prevailed in Lincoln and other areas. However, in connection with the efforts of the United States Forest Service which were previously discussed and the efficient low cost transportation afforded by the Montana 20 route, marginal costs have been sufficiently reduced to allow for profitable large scale operations in this region. This has been manifested particularly by the few larger enterprises which have become reasonably automated.

In the 1965-1966 *MONTANA Directory of Manufactures and Buyers Guide,* the fourteen industrial enterprises listed therein for Lincoln, all come under the "Major Group 24"—LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE. These are subclassified as follows:[31]

Table 5

CLASSIFICATION OF LUMBER ENTERPRISES IN LINCOLN

Code	Classification	No. of Enterprises
2411	Logging Camps and Contractors	8
2421	Saw Mills and Planing Mills	4
2491	Wood Preserving	2
	TOTAL:	14

The largest and most automated enterprise in the area is a mill located east of Lincoln, just north of Montana 20, called the Delaney Mill. At peak summer periods it has employed as many as a hundred men who were involved in logging operations in the nearby forest. The mill has the versatility to process a variety of timber but predominates in large diameter saw-timber for rough lumber which is, from a cost standpoint, more suitable for its automatic equipment. (See Photographs 6 & 7). It trucks the rough lumber via Montana 20 to its Missoula facilities, which include a drying kiln and planing mill, for the completion of processing. By-products, mostly in the form of chips, are also trucked to Missoula and sold for conversion into paper pulp.[32] A trailer camp housing facility exists within the entrance area to the mill (see Photograph 5).

Photo No. 5

Trailer Camp at entrance to Delaney Mill.

The pole and post business has also experienced an upward trend, but unlike the lumber market in general this business has had a separate product market. A number of enterprises have found this specialty reasonably profitable with lower costs to scale for long run operations. The availability of smaller timber resources, i.e., pole and post timber, is almost infinite in this area due to rapid replenishment. One major operation, the Bouma Post Yard, has increased its output over the last several years and has retail and wholesale markets for these products in eight states. The distribution has become realistic by virtue of the highway distribution facility provided by Montana 20. Bouma Post Yard is also instituting automation for the processing of poles and posts on a large volume basis. (See Photograph 8).

Several enterprises listed in Table 5 include self-employed subcontractors who supply timber, logs and poles to the larger operators. There are also (not listed)

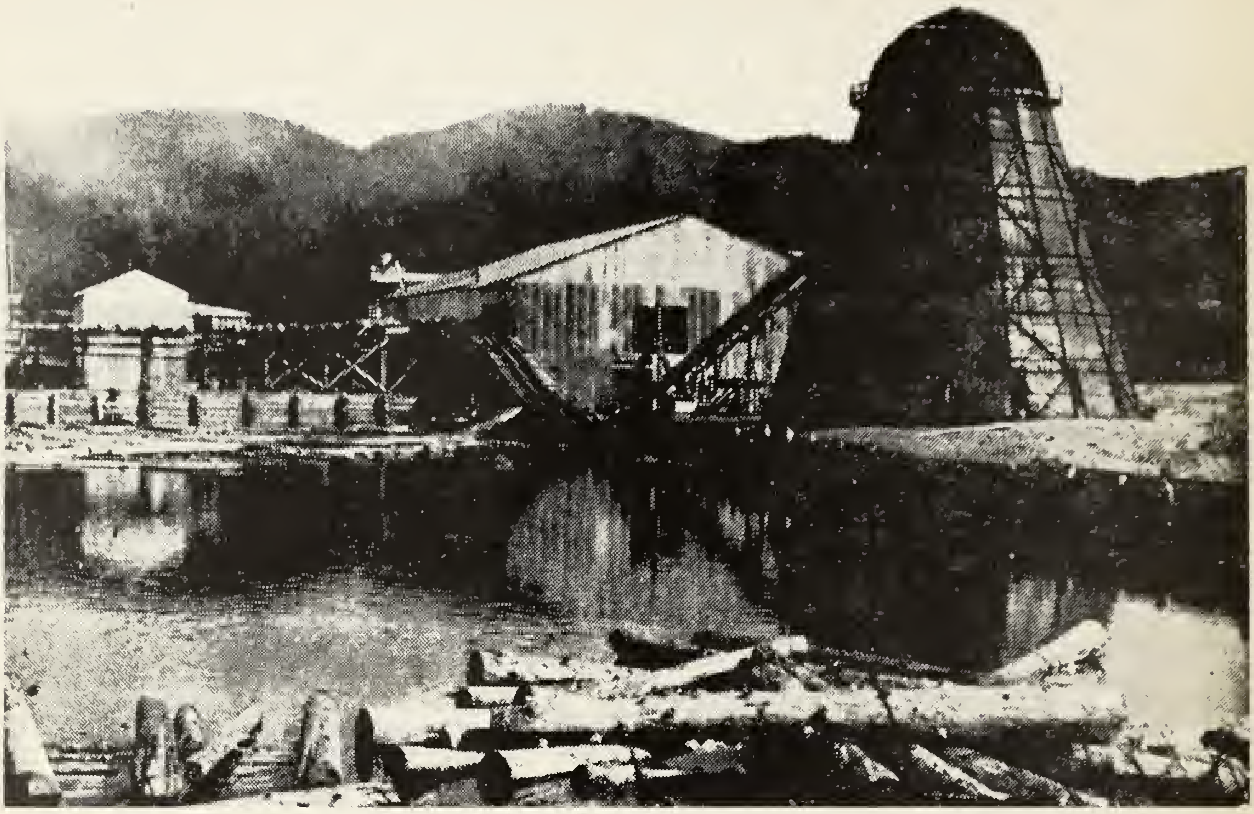


Photo No. 6
Delaney Sawmill at mouth of Lander's Fork.

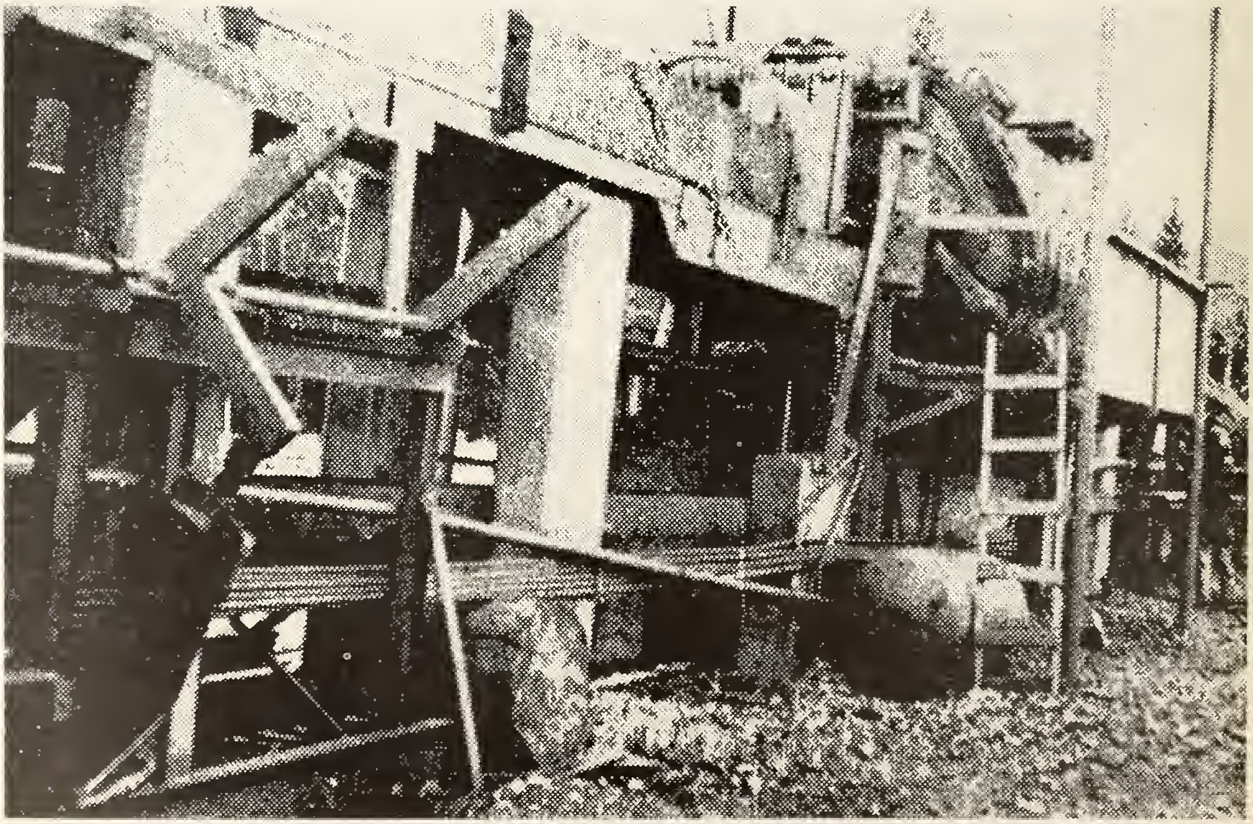


Photo No. 7
Automatic debarking machine at Delaney Sawmill.

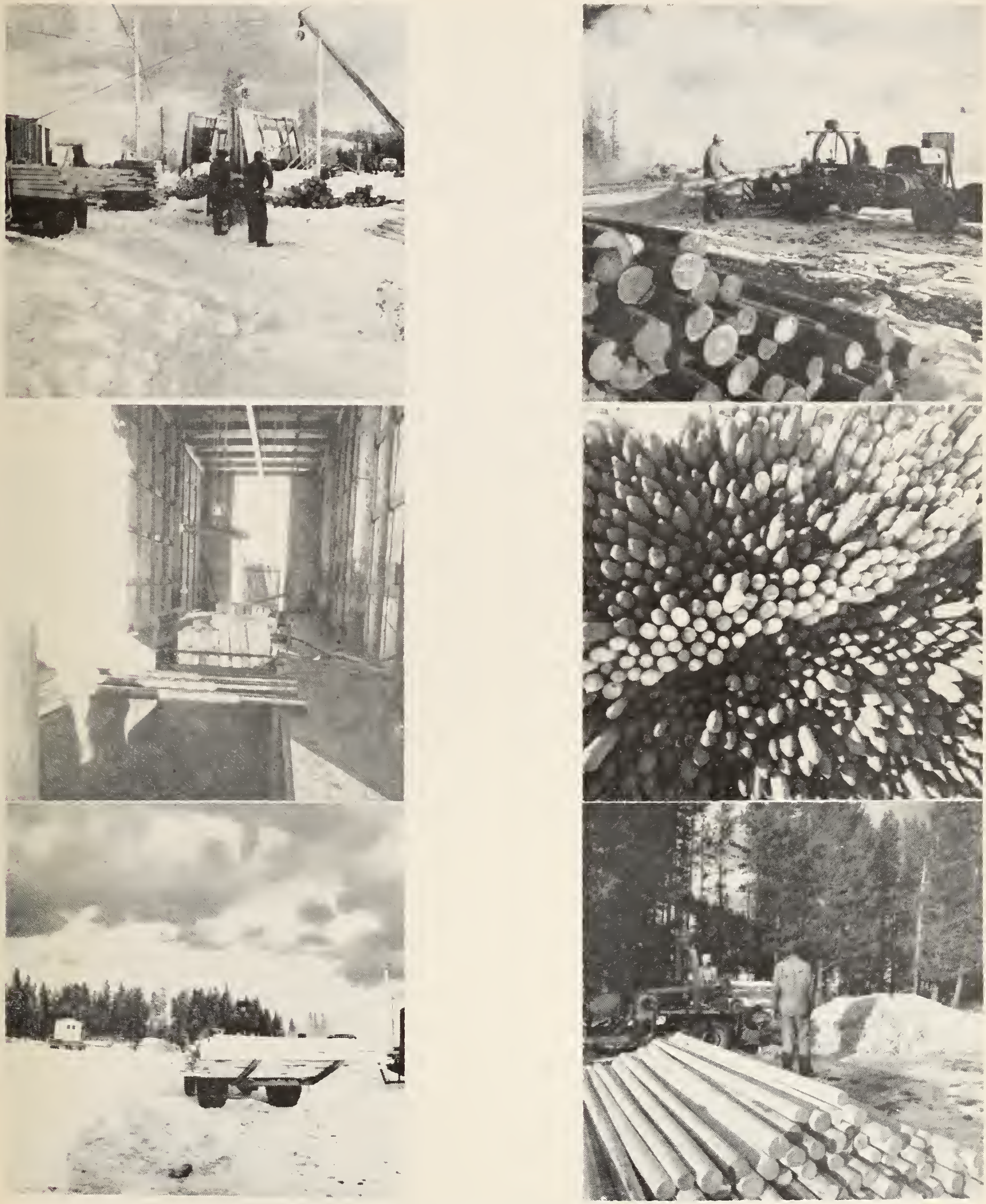


Photo No. 8
Pole and post processing at the Bouma Past Yard.

a number of free-lance loggers having the minimum equipment of a chain saw and a haul truck, who engage in pole and post cutting. They deliver to the yard and depending upon weather conditions and the length of the season, have a gross income range of between $7,000 and $8,000 per year.

Table II of the Appendix relates approximately the average number of monthly employees in this industry (industrial code 24) to the total yearly payroll. The figures are derived from the amount of unemployment taxes paid in to the Lewis and Clark county division. In general, the amounts indicated are less than actual because some larger enterprises have operating facilities in other nearby counties and pay their taxes to these divisions as a total enterprise. Despite the lower indications, however, the secular trend showing some growth and expansion for this industry is apparent. With regard to the number of enterprises, it is doubtful there will be any new additions in the near future. The steady rise in labor costs has caused some of the larger businesses to invest in automatic equipment while improvising on existing techniques to reduce costs. So far as felling and cutting-trimming operations in the forest are concerned, there will be no reduction in the number of workers, providing the existing market for these products continues.

The average employee's income in this industry, again, depending on weather and length of the season, can reasonably average around $5,000 a year for peak seasons and about $4,000 otherwise. The importance of weather cannot be overlooked in this mountain community. This is revealed in a letter report of the United States Forest Service:

> Q: Approximately how many months a year are favorable to logging operations without adverse winter weather conditions affecting these operations in the Helena Forest?
>
> A. It is felt that we have six months of good logging weather in the areas farthest from Helena, and up to ten or eleven months of logging weather in areas closer to town and in lower elevations. This, of course, includes the consideration of private timber for the longer logging period.[33]

Because of multiple locations of a number of the larger enterprises, changes in ownership of others, and recent modification in tax collection procedures, gross sales or income figures were difficult to obtain. A number of businesses volunteered this information but it was deemed unfair and inappropriate to set these out for discussion even though the enterprises would not be revealed since the small number involved under these circumstances would create a borderline situation relative to disclosure policies. In general, and based on the composite picture of all businesses engaged in lumber and logging activities of one type or another in the Lincoln area, a conservative estimate of gross annual sales for this industry would be around the $2,750,000 mark.

Table 6 is a summary of employment for this industry based on a comparison between 1958 and 1964 data contained in Table II of the Appendix for Industry 24.

Table 6

COMPARISON OF EMPLOYMENT INDICIA FOR INDUSTRY 24 1958 AND 1964 PERIOD

Year	Average No. Empl.	Percent Change	Total Yr. Payroll	Percent Change	Average Wage	Percent Change
1958	34	....	$115,948	....	$3,410	......
1964	57	+67.6	257,989	+122.5	4,526	+32.7

TOURIST AND RECREATION ACTIVITIES

Lincoln's not too distant and yet hinterland location has, for many decades provided a summer vacation area for the residents of Helena who have built summer homes within the townsite area, and in addition has attracted the outside public who learned about it. Here, the natural woodlands of the Helena National Forest and the scenic Blackfoot River Valley provided an excellent vacation land for a limited number of people who were familiar with the region prior to completion of the Montana 20 route. The area has always been noted for its excellent hunting and fishing.

After completion of the highway in 1958, greater exposure of the area to travelers was inevitable. It was not long before tourists, vacationers and sightseers were attracted to the region. While in no manner comparing to the statistics for Yellowstone or Glacier National Park, a significant yearly increase in the number of visitors was experienced as borne out by reports of the United States Forest Service which contributed much to the enhancement of facilities for this purpose. (See Photograph 9).

With the 1964 opening of the Blackfoot camp ground, three campsites have come into operation (including Aspen Grove and Copper Creek). These facilities and the recreational opportunities afforded by the area have, undoubtedly, contributed to an influx of visitors who, in turn, have affected the economy of Lincoln by their expenditures.

Table 6 compiled from the RECREATION VISITS —ANNUAL STATISTICAL REPORT of the United States Forest Service reveals the increasing annual trend in visits made to the Lincoln area since 1958.[34]

Photo No. 9
Family recreationists using new campground near Lincoln.

Table 7

RECREATION VISITS TO THE LINCOLN DISTRICT OF THE HELENA FOREST

	RECREATION SITE-AREAS				
Year	Campgrounds	Picnic Sites	Recreation Residences	Other Forest Areas	TOTAL
1958	....	540	1,300	17,140	18,980
1959	....	1,000	1,500	21,000	23,500
1960	....	1,100	1,100	27,925	30,125
1961	500	1,150	1,125	29,000	31,775
1962	2,500	800	1,100	30,000	34,400
1963	7,800	4,100	1,200	31,000	44,100
1964	11,700	3,100	1,200	29,000	45,000
TOTAL	22,500	11,790	8,525	186,065	227,800

With the opening of the campgrounds, visits increased considerably as evidenced by the figures. In fact, the 1964 figures were expected to be higher but were depressed because of the damaging floods which occurred that year. The Aspen Grove was particularly hard hit and sustained a $30,000 loss in the investment made in that campground. Restorative measures have been in progress and include the construction of jetties to divert the Blackfoot River to the opposite shore.[35]

Table 8 delineates visits with respect to primary purpose.

Table 8

PRIMARY PURPOSE OF VISITS BY USERS OF RECREATIONAL RESOURCES

Purpose	1958	1959	1960	1961	1962	1963	1964	TOTAL
Camping	640	700	800	800	1,500	11,000	14,000	29,440
Picnicking	800	1,000	6,000	6,300	7,200	5,100	5,000	31,400
Swimming	0	0	0	0	25	50	50	125
Winter Sports	50	75	50	25	50	0	0	250
Hunting	6,220	7,250	7,700	9,900	10,500	11,000	10,000	62,570
Fishing	7,100	8,425	9,250	8,000	8,500	8,600	8,000	57,875
Hiking and Riding	575	800	500	600	900	1,000	1,500	5,875
Gen. Enjoyment and Sightseeing	3,595	5,100	5,100	5,300	4,700	6,000	5,000	34,795
Gathering Forest Products	0	0	600	650	700	800	1,000	3,750
Scientific and Hobbies	0	0	25	25	100	300	250	700
Other	0	150	100	175	225	250	200	1,100
TOTAL	18,980	23,500	30,125	31,775	34,400	44,100	45,000	227,800

It is interesting to note that fishing and hunting comprise over 50 percent of the prime purpose for visits to the Lincoln area. Hunting itself—phasing into the fall season—accounts for 27.5 percent of the total visits. Consequently, this sport provides some leverage on the otherwise summer-oriented recreational economy. Because the average hunting trip to this area covers several days, the average expenditure is on the high side—between $30 to $50 per trip.

Table 9 compiled from the United States Forest Service WILDLIFE REPORT shows the number of different species of game animals in the district. The figures shown are for the year 1965.[36]

Table 9

AVAILABLE GAME SPECIES

Species	Population	Harvest Quota
Antelope	0	0
Caribou	0	0
White-tailed Deer	2,200	325
Mule Deer	4,200	1,000
Black-tailed Deer	0	0
Elk	1,500	350
Moose	25	0
Mountain Goat	50	8
Bighorn Sheep	10	0
Black Bear	225	15
Grizzly Bear	20	0
Wolves	5	1
TOTAL	8,235	1,699

THE SIGNIFICANCE AND DEVELOPMENT OF MONTANA 20 AND ITS RELATION TO THE CENTRAL HIGHWAY SYSTEM

1. Significance of the Montana 20 Route

It is realized, of course, that the potential impact of Montana 20 on the community of Lincoln and the surrounding region never formed the basis for crystallizing the highway development program and practically had no influence on the ensuing events leading to the materialization of the project. Other social and economic forces and influences embracing other regions of Montana and adjacent states were primarily responsible for precipitating approval of the program.

As social goods, highways, and particularly those spanning long distances over rugged terrain, are resolved on the principle of benefiting large segments of society and removing a vacuum from the economic pressure centers of regional areas. Thus, the fact that intermediate communities experience favorable impact as a result of highway developments, is but an incidental and secondary consequence of the major program.

And so it was with Lincoln, Montana, whose impact—important in itself—was incidental to the Montana 20 development and not the reason for it. Here, it was long overshadowed by the broad and far-reaching objectives concerned with establishing a central highway link across Montana, between North Dakota and Idaho via the Great Falls hub—then on toward Missoula and points west. (Refer to Exhibit 8).

But how was the Great Falls-Missoula routing to be accomplished? The Continental Divide was a formidable natural barrier to the most central routing through Lincoln. This barrier could only be crossed via MacDonald Pass west of Helena prior to the construction of Montana 20 over Rodgers Pass. (See Exhibit 9). This meant a forced southerly routing to Helena—through the Big Belt Mountain range along the Missouri River (U.S. 91). From Helena, the route to Missoula was in a northwesterly direction over MacDonald Pass via U.S. 12. The diseconomies (Refer to Tables 10 and 11) and nonfeasibility of this circuitous route were long apparent, and obviously not in harmony with modern highway transportation rationale and objectives. It is dubious whether the ancient Romans—master planners and road-builders—would long have tolerated an analagous situation in mountainous Italy or in some other strategic part of their Empire. Consequently, the early foresight and planning of the Central Highway System across Montana through Great Falls and on to Missoula via Lincoln, had considerable merit.

Exhibit 9 shows the value and significance of the Montana 20 link which is illustrated by the superimposed triangle whose vertices represent the cities of Great Falls, Helena and Missoula and whose sides constitute the actual road mileage between them. It was elementary, therefore, that not being confronted by unforseen topographical and other inordinate road-building difficulties, the Great Falls-Missoula hypotenuse—representing 164 road miles to be traveled as compared to 209 miles to be covered via the circuitous routing through Helena, was the ideal solution. Not only were direct economies realized from the 45 miles saved, but less obvious benefits and savings were to be gained. Thus, time would be saved, and this could be equated in a variety of value standards depending on the significance of a particular itinerary. However, all things being equal, savings in time should be measured as money saved. Of course, there are also situations where time saved would not correlate with distance saved since certain shorter routes (distance-wise) could be time-consuming because of highway congestion, obstructions and poor road conditions. The wear and tear on a vehicle due to poor road conditions is also to be considered in determining an economic route. Thus the type of road, i.e., dirt road, gravel, or oiled; its condition—good, poor; its character-

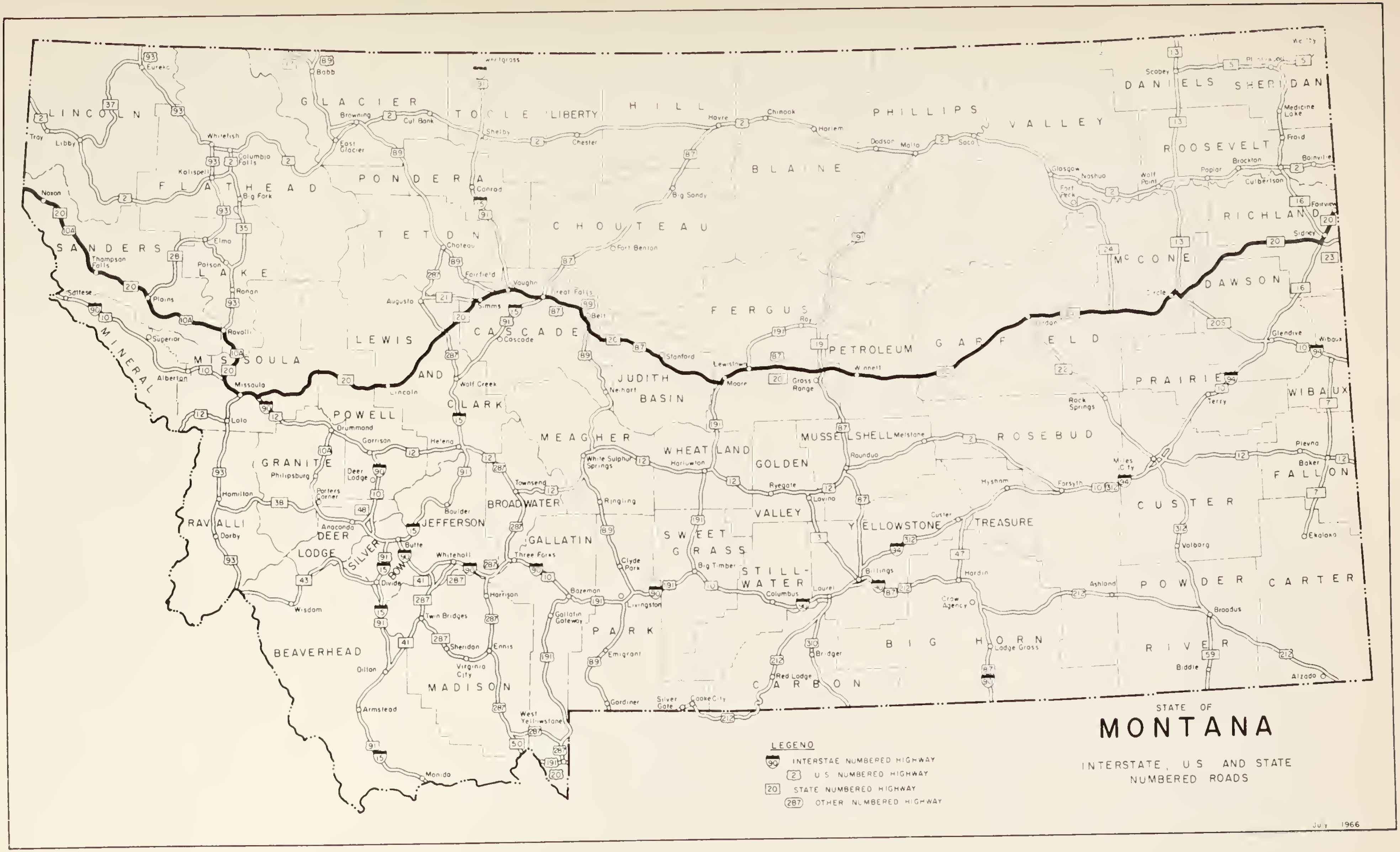
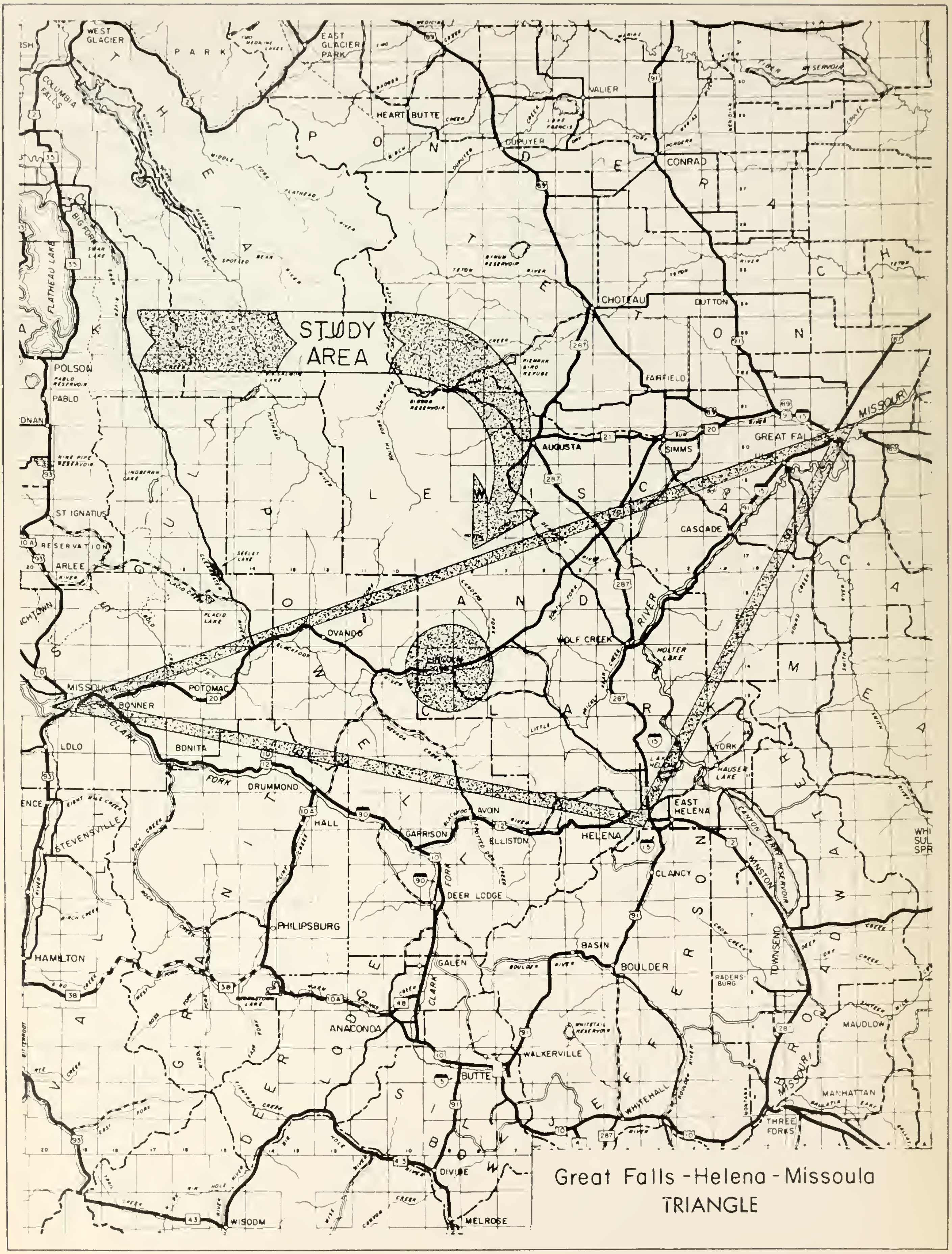


Exhibit 8.

Map of the Central Highway Route across Montana.



Great Falls - Helena - Missoula
TRIANGLE

Exhibit 9.

istics, i.e., average grade, curvature, etc.; and other factors, must be considered. Table 10 lists some of the factors as evaluated for the Lincoln versus Helena routes to Missoula from Great Falls, which would have an attritional effect on vehicle operating economies.

From the data it will be seen that the average grade, the maximum grade and the average curvature for the major pass favors the Lincoln route, whereas the average grade for the total route and the maximum curvature for the major pass is in favor of the Helena route. But relative to wear and tear cost factors and operating economies, the average curvature and grade of the major pass are extremely important—particularly where large trailer trucks and other heavy vehicles are strained considerably in negotiating roads that abound in curves and grades. Thus, for heavy truck traffic the Lincoln highway would be of greater advantage, especially with regard to the feasibility and economy in negotiating Rogers Pass as compared to MacDonald Pass via the Helena route.

Table 10

COMPARATIVE ROAD FACTORS FOR ROUTING BETWEEN GREAT FALLS - MISSOULA

Road Factor	Montana 20 via Lincoln	Old Route via Helena
1. Average Grade (Total Route)	3.26%	3.09%
2. Average Grade (Major Pass)	3.95%	5.57%
3. Maximum Grade (Major Pass)	7.0 %	8.0 %
4. Average Curvature (Major Pass)	4.11°	7.43°
5. Maximum Curvature (Major Pass)	24.0°	20.0°
Major Pass:	Rogers Pass	MacDonald Pass

Lack of congestion via Montana 20 was another positive factor to consider. Here, the Helena route is disfavored because of slow-downs due to the larger number of towns and cities and heavier road traffic involved.

Table 11 presents comparative cost data on operating mileage for Montana 20 and Helena routing to Missoula from Great Falls for passenger cars and trucks. Thus, substantial savings result when a decision is made to go to Missoula from Great Falls via Montana 20 instead of the old Helena route. Noticeably, the factors are more pronounced in the case of trucks and in total monetary terms shows that $21.33 is saved when the Lincoln route (Montana 20) is utilized. For passenger cars a saving of $6.92 is realized. From this it can be realized that efficient highway systems afford tremendous savings which can be expressed in dollar value and that ultimately these cascade down to the public in a variety of ways. For example, lower prices, better quality goods, better service and delivery—all represent "worth" —of which society is the beneficiary.

Cost factors were determined for the type of road traveled with respect to traveling in the interior of the Lincoln area. Thus, cost benefits accrued to users of bituminous surfaced roads which were previously constructed of earth and gravel. Studies conducted by the Montana State Highway Department showed that a cost of $0.1440 per vehicle mile is incurred when dirt roads are traveled as compared to $0.1195 for the bituminous surfaced type. One investigator who assessed travel and vehicular benefits in a rural area in Texas in connection with road conditions, said:

> That vehicular benefits have been capitalized into land values along improved Camp Creek Road to a marked degree is obvious in the farmer's statements regarding savings in time and repairs. Typical statements in this regard are:
>
> 'Road has kept pick-ups and cars from wearing out so quickly.'

Table 11

MOTOR VEHICLE OPERATING COSTS BETWEEN GREAT FALLS AND MISSOULA

Routing	Cost Per Vehicle Mile		Number of Miles	Total Cost Per Trip	
	Cars	Trucks		Cars	Trucks
1. Montana 20 Via Lincoln	$0.1245	$0.3554	164	$20.4180	$58.2856
				+ .0607*	+ .2622*
				20.4787	58.5478
2. Via Old Helena Route	$0.1305	$0.3797	209	$27.2745	$79.3573
				+ .1228*	+ .5244*
				27.3973	79.8817
Savings (2.—1.)	$0.0060	$0.0243	45 Mi.	$ 6.9186	$21.3339

---

*Trip Factor (Additional costs generated by local conditions such as slow downs, frequent stops at traffic signals, etc.)

> 'People needed an old car to mud it in. Don't need two cars now.'
> 'Cheaper trips. Used to take a lot more gas.'
> 'Can go to town in less than half the time.'
> 'Loaded trucks couldn't pull hills and broke in the bridges.'[37]

Translation of benefits from improved interior roads have also resulted from a marketing-distribution standpoint. Relative thereto the above investigator said:

> One of the most interesting effects of the improved road was the increased use of larger trucks including semi-trailers. Farmers stated that they could obtain better prices on larger lots of feed and fertilizer because of delivery in large trucks. Also, they were relieved of many trips in pick-ups to haul supplies and produce. A further factor was that at least one loading operation is avoided in marketing in large trucks.[38]

2. Annual Savings Benefit From Montana 20 Users

In discussing the significance of the Montana 20 route in the foregoing section where unit cost-savings factors were revealed (Table 11) the substantial amount of savings to be realized in using the new route were implied. It is of interest and importance, therefore, to translate such gains into monetary yardsticks for an annual base and extrapolate the results over the life span of a highway typified by Montana 20.

Since highway development and construction programs always entail sizable expenditures of publicly derived revenues, justification for such vast outlays has always been controversial because of the difficulties of evaluating and assessing the accrual of benefits to users. What is particularly overlooked are the innumerable intangible benefits which flow to communities and segments of society having direct and indirect associations with a highway route. Thus, many derived benefits are disregarded and forgotten.

However, despite these shortcomings, a significant portion of road user benefits, namely, positive savings such as those previously discussed, can be appraised and projected to show justifiable offsets to the heavy expenditures and cost logistics. Thus, analagous to expensive units of capital equipment, highways can—from an investment standpoint—be measured in terms of useful life and amortization.

In appropriately applying such an approach to Montana 20, the dollars savings benefits realized by preferential users of this route, can be determined on an annual basis by relating the unit savings factors to the effective average daily traffic volume for the entire year. In conjunction with this, the average daily traffic volume index which is applicable was determined from Origin-Destination Studies of the Lincoln Highway, as conducted by the Planning Survey Section of the Montana State Highway Commission during 1965. The survey analysis differentiated between "benefiting" and "non-benefiting" traffic for the various origin-destination trips spanning segments of the Montana 20 route. The non-benefiting traffic was excluded from the evaluation. In most cases this category consisted of vehicles with internal destination points and return trips not involving any possibility of alternate routing via the Helena artery or portions of it. Thus, in many cases cars were surveyed which were involved with routine trips to Lincoln for shopping or other business purposes.

Table 12 on page 35 presents the results of the origin-destination studies and equates the savings-benefits of each itinerary on an annual dollar basis. The same cost-per-vehicle factors as applied in Table 11 were used in this determination except that it was decided to omit the additional trip factor for passenger cars and trucks (refer to Table 11) since this amounted to less than one percent of total costs and would correspondingly appear as an accrued savings benefit.

Itinerary (1)—from Missoula or West to Great Falls or East (and vice-versa) constituted the largest traffic volume which benefited from the use of Montana 20. The net annual savings from this trip was over a million and one-half dollars and comprised almost 80 percent of all benefiting trips embraced within the origin-destination survey.

In summarizing these results, therefore, it is seen that total annual savings of $2,024,399 are gained by use of the Lincoln route in preference to the Helena route by an average daily volume of 612 vehicles consisting of 524 passenger cars (or equivalent—including light pick-ups) and 88 trucks.

When extrapolated for a twenty year period—regarded as the average life span of a highway characteristic of Montana 20—the total amount of savings would exceed 40 million dollars. The annual savings to highway users of $2,024,399 would pay off in little more than 4 years the total construction investment in the highway to date of $8,383,792 as shown in Exhibit 10. Actually, these savings can be regarded as conservative since users can be expected to increase yearly concomitant with national economic growth and with increasing interstate transportation through central Montana.

3. Montana 20 Development and Construction

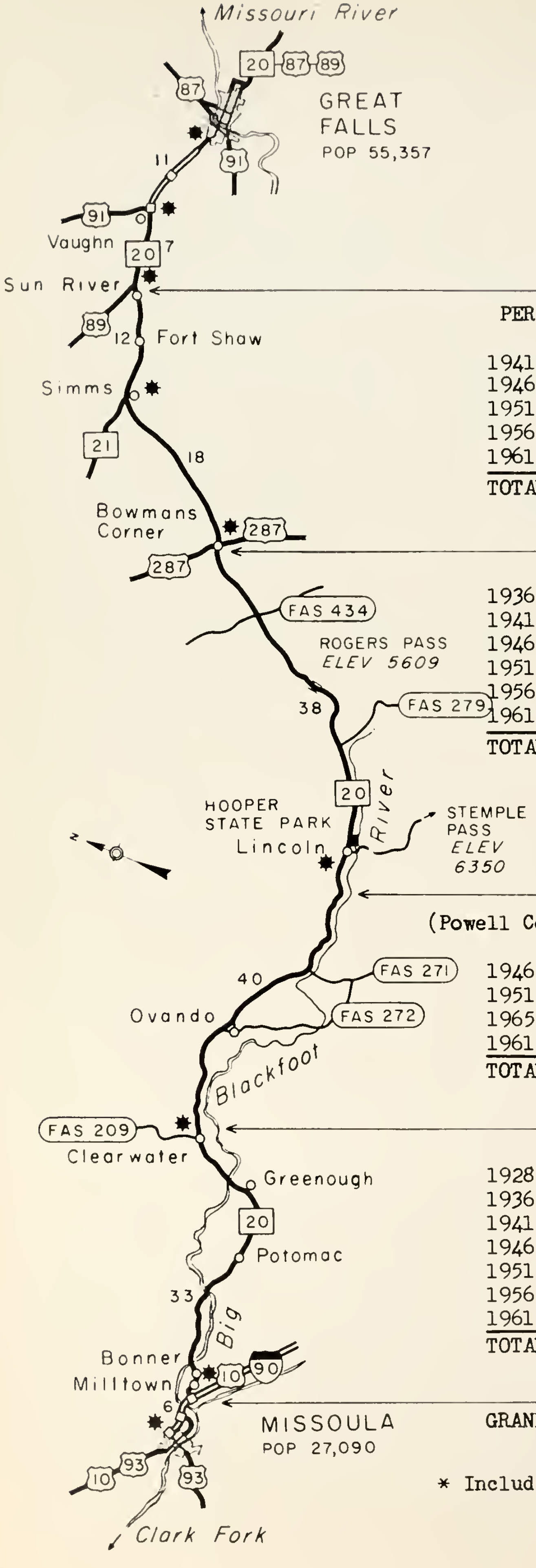
Unlike many other highway projects, the "before" stage for Montana 20 spanned at least three decades, and its construction in the early years pivoted on the often contested piecemeal legislative allocations for various

Table 12

RESULTS OF LINCOLN ORIGIN–DESTINATION STUDIES SHOWING ANNUAL SAVINGS REALIZED FROM USE OF HIGHWAY 20

	LINCOLN ROUTE			HELENA ROUTE			SAVINGS ACHIEVED
	Pass. Cars	Trucks	Total	Pass. Cars	Trucks	Total	
(1) Missoula Or West To Great Falls Or East							
Average Daily Traffic:	437	76	513	437	76	513	
Annual Vehicle Miles:	26,158,820	4,549,360	30,708,180	33,177,040	5,769,920	38,946,960	
Cost per Vehicle Mile:	$0.1245	$0,3554	....	$0.1505	$0.3797	....	
Annual Travel Costs:	$3,256,773	$1,616,842	$4,873,615	$4,329,603	$2,190,838	$6,520,442	$1,646,827
(2) Missoula Or West To U.S. 89							
Average Daily Traffic:	15	3	18	15	3	18	
Annual Vehicle Miles:	799,350	159,870	959,220	1,237,350	247,470	1,484,820	
Annual Travel Costs:	$ 99,519	$ 56,817	$ 156,336	$ 161,474	$ 93,964	$ 255,438	$ 99,102
(3) Missoula Or West To U.S. 91							
Average Daily Traffic:	16	4	20	16	4	20	
Annual Vehicle Miles:	893,520	223,380	1,116,900	1,278,960	319,740	1,598,700	
Annual Travel Costs:	$ 111,243	$ 79,589	$ 190,632	$ 166,904	$ 121,405	$ 288,309	$ 97,677
(4) Missoula Or West To Montana 287							
Average Daily Traffic:	24	1	25	24	1	25	
Annual Vehicle Miles:	1,016,160	42,340	1,058,500	1,506,720	62,780	1,569,500	
Annual Travel Costs:	$ 126,511	$ 15,047	$ 141,559	$ 196,626	$ 23,837	$ 220,464	$ 78,905
(5) FAS 271 (Helmville) To Great Falls Or East							
Average Daily Traffic:	10	3	13	10	3	13	
Annual Vehicle Miles:	390,550	117,165	507,715	554,800	166,440	721,240	
Annual Travel Costs:	$ 48,623	$ 41,640	$ 90,263	$ 72,401	$ 63,197	$ 135,598	$ 45,335
(6) FAS 271 (Helmville) To U.S. 91 And North							
Average Daily Traffic:	1	0	1	1	0	1	
Annual Vehicle Miles:	35,040	....	35,040	59,495	....	59,495	
Annual Travel Costs:	$ 4,362	....	$ 4,362	$ 7,764	....	$ 7,764	$ 3,402
(7) FAS 271 (Helmville) To U.S. 89 And North							
Average Daily Traffic:	0	1	1	0	1	1	
Annual Vehicle Miles:	....	52,485	32,485	....	62,050	62,050	
Annual Travel Costs:	....	$ 11,545	$ 11,545	....	$ 23,560	$ 23,560	$ 12,015
(8) FAS 271 (Helmville) To Montana 281 And North							
Average Daily Traffic:	1	0	1	1	0	1	
Annual Vehicle Miles:	21,535	....	21,535	43,340	....	43,340	
Annual Travel Costs:	$ 2,681	....	$ 2,681	$ 5,525	....	$ 5,525	$ 2,844
(9) FAS 209 (Kalispell) To FAS 279 South To Helena							
Average Daily Traffic:	16	0	16	16	0	16	
Annual Vehicle Miles:	1,191,360	....	1,191,360	1.366,560	....	1,366,560	
Annual Travel Costs:	$ 148,324	....	$ 148,324	$ 178,336	....	$ 178,336	$ 50,012
(10) FAS 209 (Kalispell) To Montana 287 At Four Corners							
Average Daily Traffic:	4	0	4	4	0	4	
Annual Vehicle Miles:	268,640	....	268,640	319.740	....	319,740	
Annual Travel Costs:	$ 33,445	....	$ 33,445	$ 41,726	....	$ 41,726	$ 8,281
TOTAL COSTS:	$3.831,481	$1,821,280	$5,652,761	$5.160.359	$2,516,801	$7,677,160	
TOTAL SAVINGS:	....	....	....	....	....	....	$2,024,399

MONTANA 20 CONSTRUCTION PROGRESS AND COSTS



PERIOD	NO. PROJECTS	CONTRACT MILES	COST
1941 - 45	3	21.902	$304,318
1946 - 50	1	8.462	120,000
1951 - 55	1	18.396	228,513
1956 - 60	1	5.720	563,596
1961 - 65	1	5.275	400,991
TOTAL:	7	59.935	1,617,418
1936 - 40	3	22.229	443,893
1941 - 45	1	3.506	85,633
1946 - 50	4	11.147	829,161
1951 - 55	4	33.942	969,695
1956 - 60	9 *	56.735	1,617,811
1961 - 65	7 *	49.409	1,254,858
TOTAL:	28	176.968	5,201,051
(Powell County Line)			
1946 - 50	1	0.024	-
1951 - 55	1	3.799	265,976
1965 - 60	0	-	-
1961 - 65	1 *	3.799	4,919
TOTAL:	3	7.622	270,895
1928 - 35	1	3.228	46,424
1936 - 40	4 *	14.039	365,728
1941 - 45	5 *	19.610	501,941
1946 - 50	2 *	7.467	123,450
1951 - 55	2 *	7.011	238,066
1956 - 60	1 *	1.080	2,215
1961 - 65	2 *	10.107	15,704
TOTAL:	17	62.542	1,293,528
GRAND TOTAL:	55	307.067	8,383,792

* Includes Maintenance Betterments

Exhibit 10.

portions of the road. Exhibit 10 shows a breakdown of the construction history and cost of the major segments of the road. These are resolved in terms of number of contract projects within the given period, contract miles therefor, and the corresponding cost.

From 1928 to the present (1965), a total of $8,383,792 was spent in 55 separate contracts covering a total of 307.067 contract miles of construction (including reconstruction and repair work). Although the highway was officially completed in 1958 when the light bituminous surface was laid, additional construction work followed in subsequent years which was primarily concerned with an overlay of high type pavement.

In 1964 some reconstruction was necessary because of excessive flood damage which resulted that year.

It will be noticed in refering to the map that of the total expenditure made, 62 percent or $5,201,051 covered the Lincoln-Rogers Pass sector.

The early stages of the development of the highway were controversial, uncertain and involved political-economic issues confronting the cities of Helena, Great Falls and Missoula. Great Falls and Missoula were both vitally concerned with expediting the program which would affect their economies by making the highway system a reality. Extracts from an editorial by Ernest Immel, in 1936, read:

> An improved central highway through central Montana by way of Lewistown and Great Falls to Missoula is of great economic importance in the fuller development of this greater interior region of the state.
>
> The opportunities to develop tourist travel were brought up but it was pointed out that before the route can expect to attract much recreational travel it is necessary to complete the highway to Missoula. Hence the building of the Great Falls-Missoula mileage is considered vital.
>
> North Dakota is interested because the link from Sidney connects with the Dakota system.[39]

However, from the viewpoint of Helena residents, the proposed routing was regarded as unnecessary, and a deliberate diversion of traffic from the capitol city. Other cities and towns lying on various arterial links with Missoula dissented to the proposal. They had enjoyed the benefits of the traffic and felt they would sustain an economic loss as a result of this bypass development. In 1937 a restraining order was issued halting bids on the Rogers Pass (easterly approach) on various legal grounds, but it was dismissed by the Montana Supreme Court. During the following years delaying tactics based on various technicalities continued to be employed in the Lewis and Clark county construction link, but sections in other counties continued to be built; and with the passage of time the highway link continued to materialize. Resistance and obstruction maneuvers waned, and in many instances it came to be realized that early trepidations were unfounded.

In 1956 the important and costly Rogers Pass (see Photograph 10) link was completed and the only remaining portion to be finished was a segment west of Lincoln to Ovando.

In 1958, the bituminous surfacing was laid for the entire route and the highway became totally functional.

A recent item in the *Independent Record, Helena, Montana* was captioned: "Central Montana Highway Is Now Border to Border" and mentioned that the Milltown to Idaho designation for the highway had been approved by the state highway commissioners following a request from the Central Montana Highway Association. Prior to that time, the Central Montana Highway (Montana 20) extended from the eastern boundary crossing near Sidney (refer to Exhibit 8) to Milltown near Missoula.[40]

BUSINESS ENTERPRISES AND EMPLOYMENT

1. Classification and General Aspects

There are about forty business enterprises in Lincoln. Fourteen of these are of an industrial nature and relate to the Lumber and Wood Products Group (Industry 24) which has been previously discussed. The balance, consisting of twenty-six enterprises, are predominantly involved with the sale of goods and services to highway tourists, commercial and recreational traffic. On the whole, it is estimated that these twenty-six activities currently generate over $1.5 million in sales of goods and services per year. This volume is indicative of an increasing trend which is substantiated by comparison of gross income data (not disclosed) and correlative payroll and employment data in Table II of the Appendix. Other statistics (discussed below) also reveal this trend, i.e., gasoline gallonage, etc. The overall dependence on and response to the volume of Montana 20 traffic by these enterprises is decisive and vital to their existence. Thus, the cafes, taverns, service stations, motels, etc., are totally oriented to the Lincoln highway.

Beside their total dependence on Montana 20 for sales revenue, practically all of the enterprises are seasonally oriented—with the peak revenue generating period occurring during the summer months. During the summer the long daylight hours, favorable weather and vacation period, are conducive to a prolonged flow of tourist and commercial traffic.

During the peak summer months most of the businesses operate on a two-shift basis; consequently payrolls and employment are at their maximum. In many cases involving family-owned enterprises, all family

Photos No. 10

Scenes of Rogers Pass on the Continental Divide.

members are active over the entire day. (It was often difficult to arrange personal interviews because the proprietors were too busy and couldn't afford the time.)

By the early part of September, however, this *modus oparandi* reverses as the decline in tourist traffic shows a continuous decrease (refer to Exhibit 16, p. 49). The decrease in daylight hours also causes a decline in business (commercial) traffic volume. As a result, there is a drop in sales with an attendant reduction in employment.

During the fall, however, the onset of the hunting season brings an appreciable number of sportsmen into the area (refer to p. 50 and Table 8, p. 29) which adds some selective expenditures to a number of the enterprises but has no effect on others.

At the height of the winter season Lincoln phases into a state of inactivity so far as the tourist business is concerned. However, a number of highway oriented enterprises remain open for the usual commercial traffic between Great Falls and Missoula. Some smaller motels and establishments, however, shut down for about four to six months.

Table 13 below presents a description and classification of the twenty-six enterprises constituting most of the business located within the town. In a number of cases dual enterprises exist but these have not been separated in order to avoid double counting.

Since 1956 it is estimated that a net of thirteen enterprises came into operation in Lincoln and when added to the thirteen businesses existing at that time, formed the basis of the present total of twenty-six. This estimate is based on evaluation of information obtained from the State Board of Health, the Montana Petroleum Association and other sources which included the interview questionnaire.

In connection with Table 11 of the Appendix, the average number of monthly employees and total yearly wages are shown for Industry 24 (already discussed), Industry 55, Industry 58 and Industry 70. The data for Industry 42, Industry 53 and Industry 54 have been omitted because of the hazard of disclosure. The same has been done for the telephone company under industry code 48.

The Food and Meat Market, Variety Store, Hardware and Building Supply, Trucking and Freight are not all highway oriented.

The variety store, for example, also handles a product line of equipment associated with the lumber industry, i.e., chain saw line and other equipment. However, the bulk of its other items are tailored to the tourist traffic and sportsmen.

The food and meat market is intended to serve the Lincoln community for the most part but does experience larger sales volume during the course of the summer when tourists, campers and summer residents predominate.

The hardware and building supply, and trucking and freight businesses depend on internal demands for their products and services. But trucking and freight, which mainly serve the Lincoln lumber industry is dependent on the highway for accomplishing its key business function, namely, transportation. Consonant with the rising employment trend in the lumber industry (discussed previously), it too has shown a dramatic rise in employment and wages since 1957, with the exception of 1961 which was a recession year.

Table 13

DESCRIPTION AND CLASSIFICATION OF BUSINESS ENTERPRISES IN LINCOLN

Type-Description	Number	Industrial Code Description[41]
Bar and Cafe	3	58 — Retail and Drinking Places
Cafeteria	1	58 — Retail and Drinking Places
Tavern	1	58 — Retail and Drinking Places
Dude Ranch and Hunting Lodge	1	70 — Hotels, Rooming Houses, Camps and Lodging Places
Trailer Camp-Motel	1	70 — Hotels, Rooming Houses, Camps and Lodging Places
Motels	6	70 — Hotels, Rooming Houses, Camps and Lodging Places
Food and Meat Market	1	54 — Retail Trade, Food
Variety Store	1	53 — Retail Trade, General Merchandise
Hardware and Building Supplies	1	53 — Retail Trade, General Merchandise
Trucking and Freight	1	42 — Motor Freight Transportation and Warehousing
Service Stations	5	55 — Auto Dealers and Service Stations
Telephone Company	1	48 — Communication and Broadcast
TOTAL	26	

Photos No. 11
Lincoln—highway oriented business enterprises.

The steady rise in employment and wages are also indicative of Industry 58—Retail and Drinking Places (bars and cafeterias) as evidenced from the data in Table II of the Appendix. These highway oriented establishments have responded to the yearly increase in traffic volume, particularly during the summer. Table 14 below summarizes the employment situation for these enterprises for 1958 (highway completion year) in contrast to results for 1964.

Table 14

COMPARISON OF EMPLOYMENT INDICIA FOR INDUSTRY 58 1958 AND 1964 PERIOD

Year	Average No. Empl.	Percent Change	Total Yr. Payroll	Percent Change	Average Wage	Percent Change
1958	9	....	$16,172	....	$1,797	....
1964	17	88.9%	$46,383	186.8%	$2,728	51.8%

The seasonal aspect of employment for the above group is readily apparent from the average wage, which is low. Unemployment compensation provides some income during the lay-off period which embraces the winter months.

Although motels and lodging places have shown a small rise in employment, it is unlikely there will be any significant increase in the next few years because of the low return in this business which depends on a high turnover of customers. In addition, the opening of three campgrounds by the United States Forest Service does not indicate an increase in their highly summer-highway oriented business. Even though there is an increase in fall activity due to the hunting season, it is doubtful whether the motels receive any sizable revenue because of the limited amount of service aside from overnight lodging which they can provide. From the standpoint of entrants into this group, it is unlikely there will be new additions in this category.

Industry 55, involving service stations, is discussed below in conjunction with gasoline gallonage.

2. Service Stations and Gasoline Gallonage

Service stations, which are practically linked to Montana 20 for their survival, were analyzed in connection with the growth of Lincoln's economy. Although a business questionnaire was employed for the personal interview, it was difficult to obtain data on past performance. Change of ownership and lack of appropriate records were the primary shortcomings.

A good indicator, however, which is expressive of sales is gasoline gallonage, and adequate data to effect an analysis was obtained from the Montana Petroleum Association and the Montana Highway Department.

The information supplied by the Montana Petroleum Association was a recapitulation of gasoline gallonage supplied various stations in Lincoln from 1952 to 1964. The figures, compiled by them prior to 1959, were based on information obtained directly from the supplying companies and distributors who were willing to release the information. The Association suggested that too much reliance should not be placed on the figures since they might not reflect the true picture at the time. The post-1959 data compiled from gasoline taxes could, however, be regarded as appropriate in presenting the trend of the gasoline market in Lincoln.

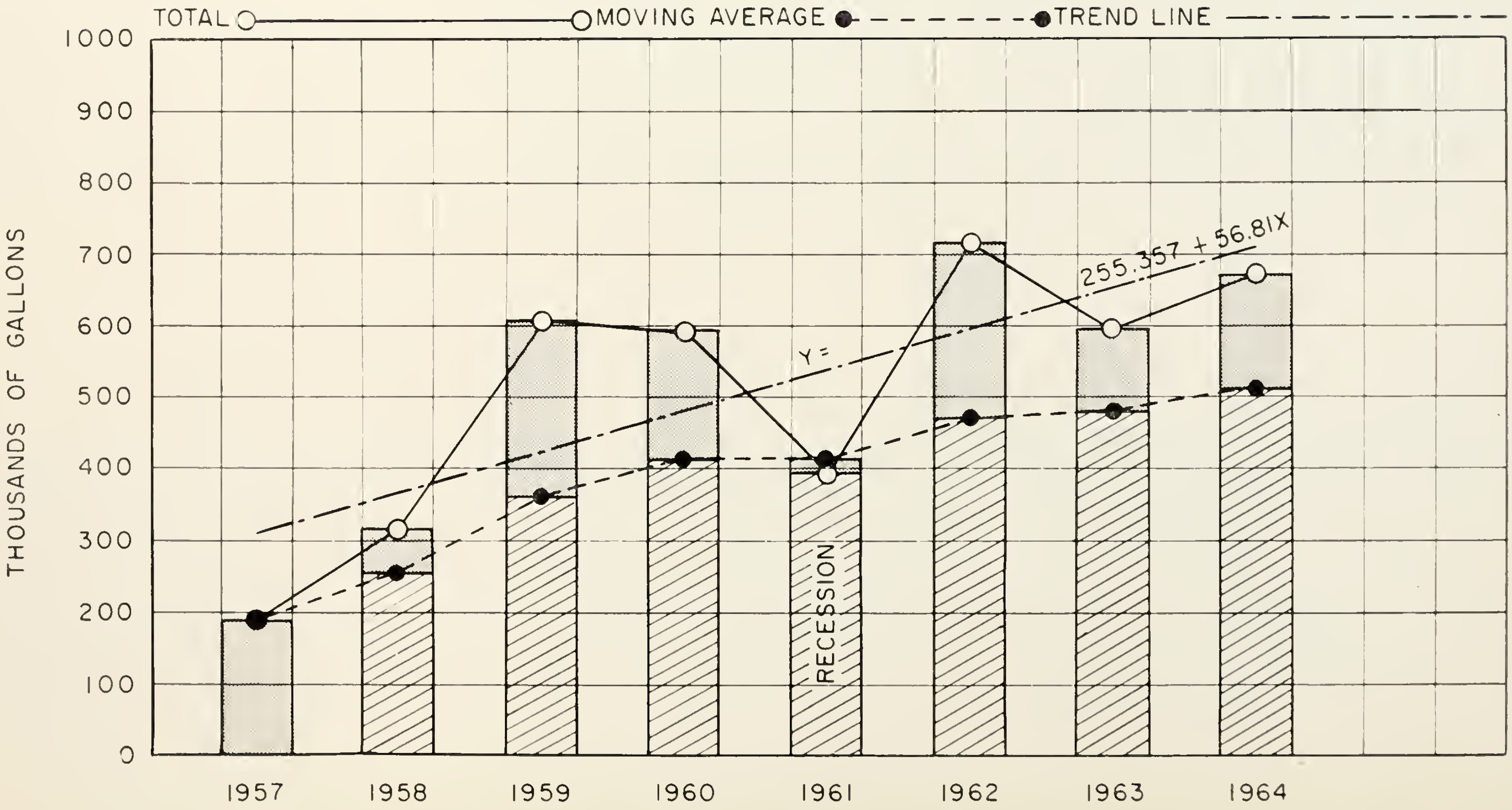
The data on gasoline gallonage supplied by the Montana Highway Department supplemented the foregoing, including the first seven months of 1965.

Currently there are five gasoline (service) stations operating in Lincoln. The latest opened around July, 1965. In 1964 there were four, from 1963 to 1959 three stations were in operation, prior to that there were two, and initially only one.

Exhibit 11 shows the increasing trend in gasoline gallonage supplied from 1957 to 1964. Although this is revealed in the rise of the moving average of the annual gasoline supply, the basic dampening effect of such an average does not present the realistic tendency which is more appropriately shown by the trend line. The year 1961 again showed the effect of the recession in a decline in gallonage which, of course, meant decreased sales for service stations.

Exhibit 12 depicts monthly and quarterly effects of gallonage from 1963 through 1965. Third quarter gallonage as geared to effective sales therefrom is shown as the peak of the annual period when traffic volume is at its highest. The comparative increase of the first and second quarter of 1965 over 1964 is also evident and correlates with the effect exhibited by the trend line in Exhibit 11.

TOTAL AND MOVING AVERAGE ANNUAL GALLONAGE SUPPLIED LINCOLN SERVICE STATIONS 1957—1964



1958 Was Completion Year of Bituminous-Surfacing on Montana 20 (Lincoln Area)

Exhibit 11.

MONTHLY AND QUARTERLY GALLONAGE SUPPLIED LINCOLN SERVICE STATIONS
DECEMBER 1963 JULY 1965

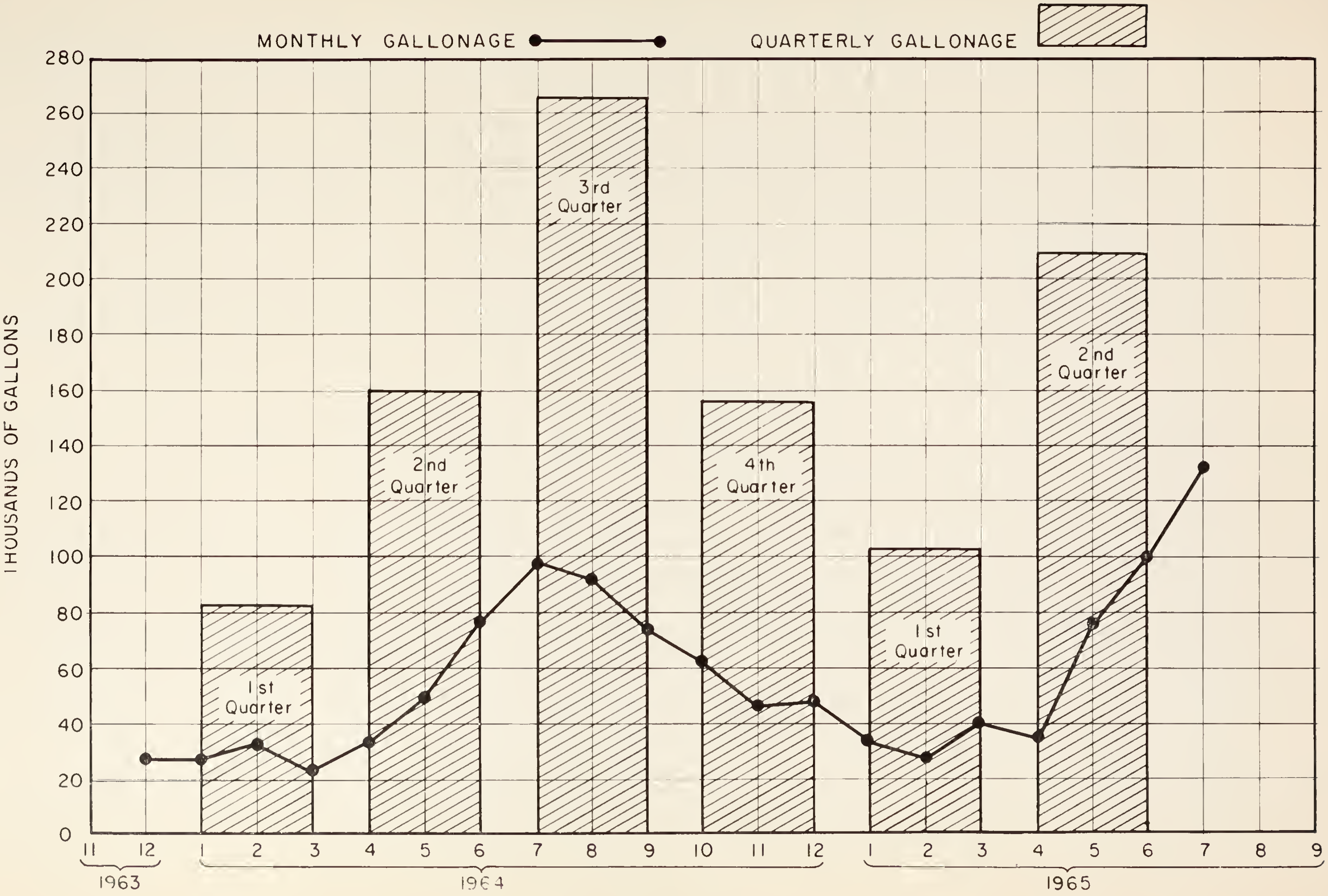


Exhibit 12.

UTILITY SERVICES

1. Telephone Installations

The Lincoln and Helena Telephone Company was consulted for information on telephone lines installed for residential and business use as far back as their records are available. The data covered a ten year period (1954-1964), and is compiled in Table 15 below.

Table 15

TELEPHONE INSTALLATIONS

Year	Total Installations	Percent Change	Index (1958 Base)
1954	39	....	36.8
1955	48	+23.1%	45.3
1956	59	+22.9	55.7
1957	98	+66.1	92.5
1958	106	+ 8.2	100.0
1959	110	+ 3.8	103.8
1960	130	+18.2	122.6
1961	151	+16.2	142.5
1962	159	+ 5.3	150.0
1963	174	+ 9.4	164.2
1964	192	+10.3	181.1
1965	233	+21.2	220.0

The separation of business and residential phones was not feasible because of the small scope of operations involved during this period which included many transient customers who could not be distinctly classified. The data also had to be adjusted to exclude twenty-five connections relating to the Canyon Creek area—not included in this study. These installations were concerned mostly with farming enterprises which have been relatively constant over the years. Currently they have been excluded and are now listed under the Canyon Creek exchange. Extensions, representing about 35% of the installations are included in Table 15. In referring to the percent change in Table 15, it should be noted that a continuous but nonuniform increase was experienced each year. The year 1957 showed the highest increment and could be attributed to the highway construction activity in the vicinity.

Recently, 1965 figures were obtained on installations and this data is presented in Table 16. A separation relative to use is shown with the corresponding number of extensions.

Table 16

1965 TELEPHONE INSTALLATIONS AND EXTENSIONS FOR LINCOLN

Use	Regular	Extension	Total
Residential	138	22	160
Commercial	47	24	71
Fire Alarm	2	....	2
TOTAL	187	46	233

2. Electricity

The Montana Power Company was very cooperative in providing significant information and data regarding their service in the Lincoln area.

Their first line over the mountains to Lincoln was completed in 1948 and was intended to serve the Mike Horse mine which later became inoperative.

The increasing number of summer homes being built and the large amount of highway construction activities going on at the time necessitated a second line, which was brought in toward the close of 1954.

Exhibit 13 compares the number of power installations made since 1954 relative to use. The increase in residential demands is apparent and has, since completion of the highway, shown a more responsive upward trend than that exhibited by commercial and industrial applications. The latter in particular, shows a saturated position in the Lincoln area.

Since 1958 total power installations show an increase of 47.2%, residential installations have risen 52.4%, commercial—34.1%, but industrial users declined by 25%.

Exhibit 14 compares total power installations with telephones since 1954. After 1957 both utilities show a harmonized upward trend emphasized by residential requirements for the growing community.

PROPERTY SALES AND VALUATION

Since completion of Montana 20 in 1958, assessed property valuation for the Lincoln area has risen 53.5 percent. Table 17 below shows the change in taxable valuation in Lincoln since 1951.

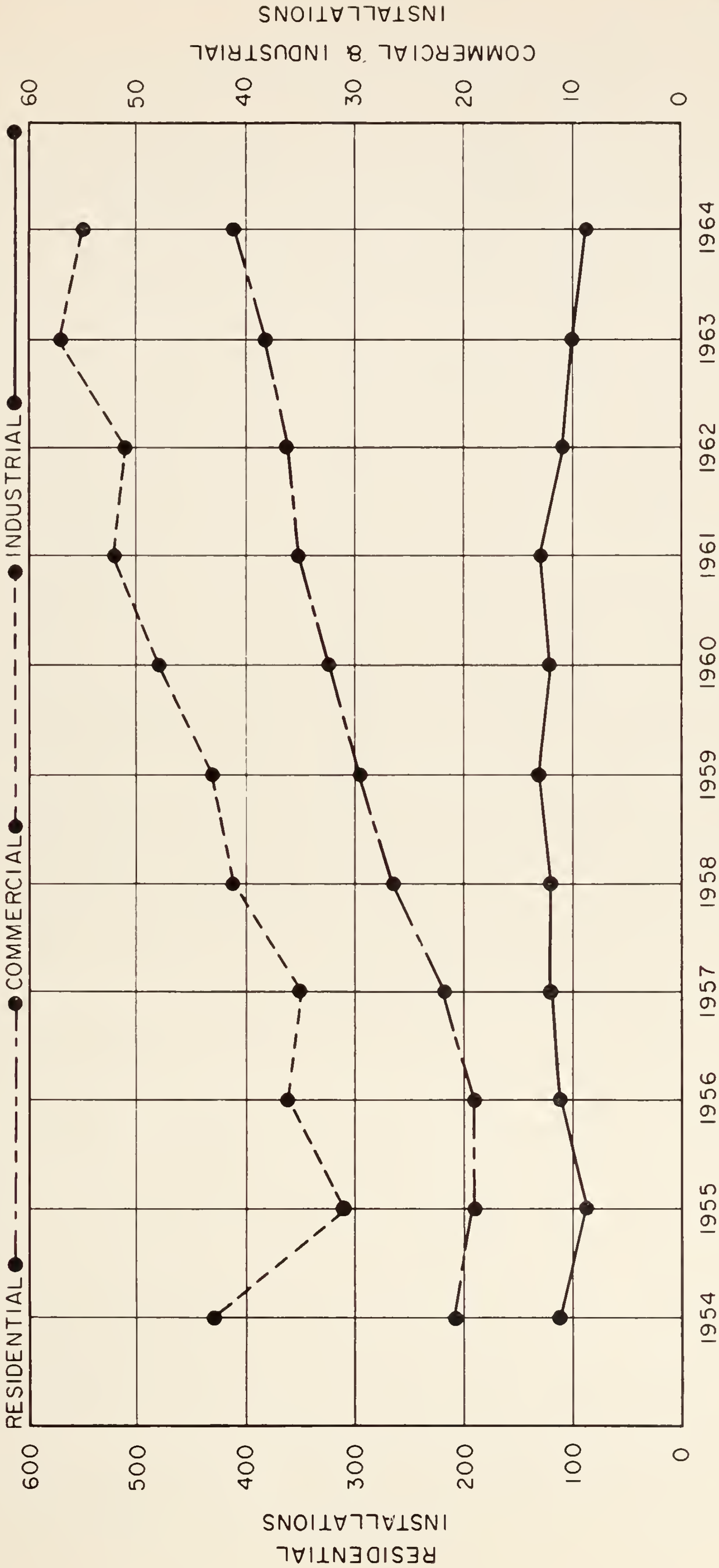
Table 17

LINCOLN—TAXABLE PROPERTY VALUATION

1951-1965

Year	Valuation Taxable	Change Percent	(1958 Base) Index
1951	$257,312	....	64.5
1952	273,966	+ 6.5%	63.7
1953	271,380	— 0.9	68.0
1954	273,912	+ 0.9	68.6
1955	295,723	+ 8.0	74.1
1956	306,342	+ 3.6	76.8
1957	308,899	+ 0.8	77.4
1958	399,048	+29.2	100.0
1959	475,166	+19.1	119.1
1960	485,779	+ 2.2	121.7
1961	507,224	+ 4.4	127.1
1962	517,856	+ 2.1	129.8
1963	606,869	+17.2	152.1
1964	612,539	+ 0.9	153.5

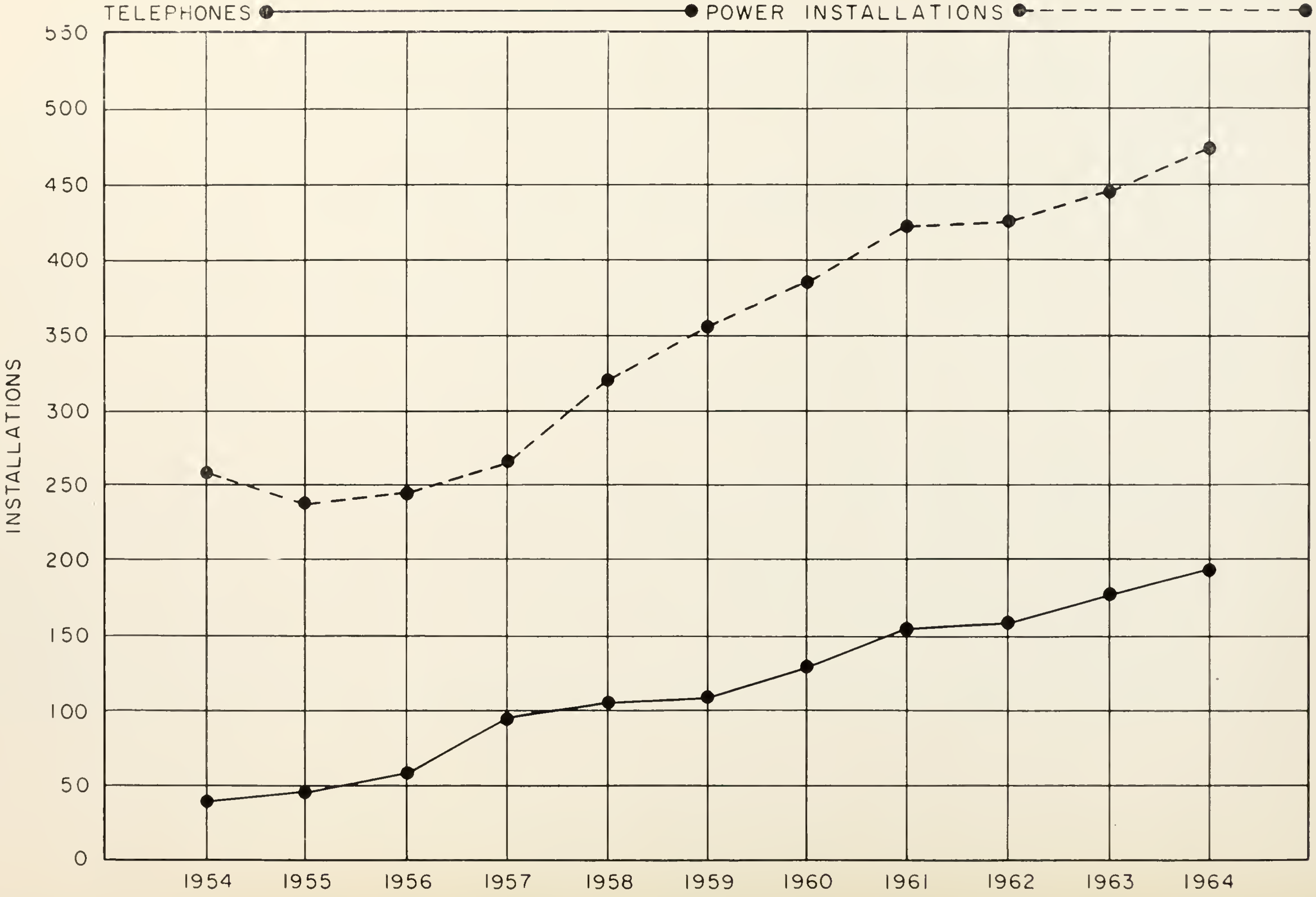
COMPARISON
POWER INSTALLATIONS
BY APPLICATION
1954 — 1964



1958 Was Completion Year of Bituminous-Surfacing on Montana 20 (Lincoln Area)

Exhibit 13.

COMPARISON
TELEPHONE AND POWER INSTALLATIONS
1954 — 1964



1958 Was Completion Year of Bituminous-Surfacing on Montana 20 (Lincoln Area)

Exhibit 14.

For 1965 Lewis and Clark County's taxable valuation was $30 million—up 3.41 percent. Relative to the Lincoln taxable district, the valuation was $66,079 which was an increase of 9.1 percent from 1964.[42]

Referring to Table 17 on page 44 it is apparent that in 1958 the valuation increased by 29.2 percent, and 17.2 percent in 1963 after a reassessment had been made the year before.

In connection with the sale of platted property in the area, since 1955 there were 421 transfers in Lincoln. These are detailed in Table 18 below.

Table 18
SALE OF PLATTED PROPERTY IN LINCOLN
1955-1965

Property Area Description	1955 to 1957	1958 to 1960	1961 to 1965	TOTAL
Lincoln Villa Sites	49	60	54	163
Blackfoot Subdivision	11	5	7	23
Lambkin Addition	17	11	25	53
Mulcare Tracts	57	60	65	182
TOTAL	134	136	151	421

Within the last four months property demand in the area has increased in connection with the tempo of exploratory work in mining.

In order to obtain an idea of the real property market transition in Lincoln, a sample of sales effected in various years since 1958 was obtained from the Helena Abstract and Title Company. Table 19 below presents the pertinent data. (The initial value and final sale value was determined from the revenue stamps on the deed).

Table 19
TRANSITION OF MARKET VALUE OF PROPERTY SOLD IN LINCOLN

Initial Year	Number of Lots	Initial Year Sale Value	Year Sold	Sale Value	Percent Increase
1955	2	$15,000	1965	$31,000	106.7
1955	1	2,000	1960	7,500	275.0
1955	½	1,000	1958	2,000	100.0
1955	1	500	1958	500*	300.0
1955	1	100	1960	1,000	900.0
1956	1	100	1959	500	400.0
1957	2	3,000	1959	3,500	16.7
1957	1	500	1961	1,000	100.0
1957	2	500	1963	4,500	800.0
1957	1	500	1962	1,500	200.0

---

*Represents ¼ of the lot sold.

It is evident that market (sale) values of real property in the Lincoln area have increased within the last four to five years correlative with the development of the community as associated with the Montana 20 highway, and recent prospective developments in mining exploration.

TRAFFIC VOLUME AND CLASSIFICATION OF MONTANA 20

Table 20 below shows the average daily traffic volume on Montana 20 in the Lincoln area since 1955.

Table 20
LINCOLN—AVERAGE DAILY TRAFFIC VOLUME

Year	Volume	Percent Change	Index (1958 Base)
1955	187	....	25.0
1956	447	+139.0%	59.8
1957	544	+ 21.7	72.8
1958	747	+ 37.3	100.0
1959	764	+ 2.3	102.3
1960	900	+ 17.8	120.5
1961	898	— 1.3	120.2
1962	963	+ 7.3	128.9
1963	1,092	+ 13.4	146.2
1964	1,020	— 6.6	136.5

The sharp increase, 139.0% in 1956, is attributed to the high volume of road construction traffic recycling over the area. Also, it will be recalled that in 1956 the Rogers Pass link was completed which brought in traffic to Lincoln from the area east of the Divide, including Great Falls.

The decline in 1961 could be due to the effect of the recession which had influenced numerous other previously mentioned indicators.

The decrease in average daily traffic for 1964, however, would be endemic to the region which had experienced devastating flood damage requiring reconstruction of a number of portions of the highway.

Since 1958—the year when the bituminous surfacing was laid—an increase of 36.5 percent in daily average traffic volume has resulted.

During the period August 7, 1965 through November 13, 1965, traffic counters were installed on Montana 20 about one mile east of Lincoln. Exhibit 16 is a graphic summary of the statistics. There were five days in the period when the counter was inoperative, but extrapolations were made to compensate for the missing data. It will be noticed that two scales are used—one to show the average daily traffic volume for the calendar week; the other to show the total weekly volume for the corresponding week.

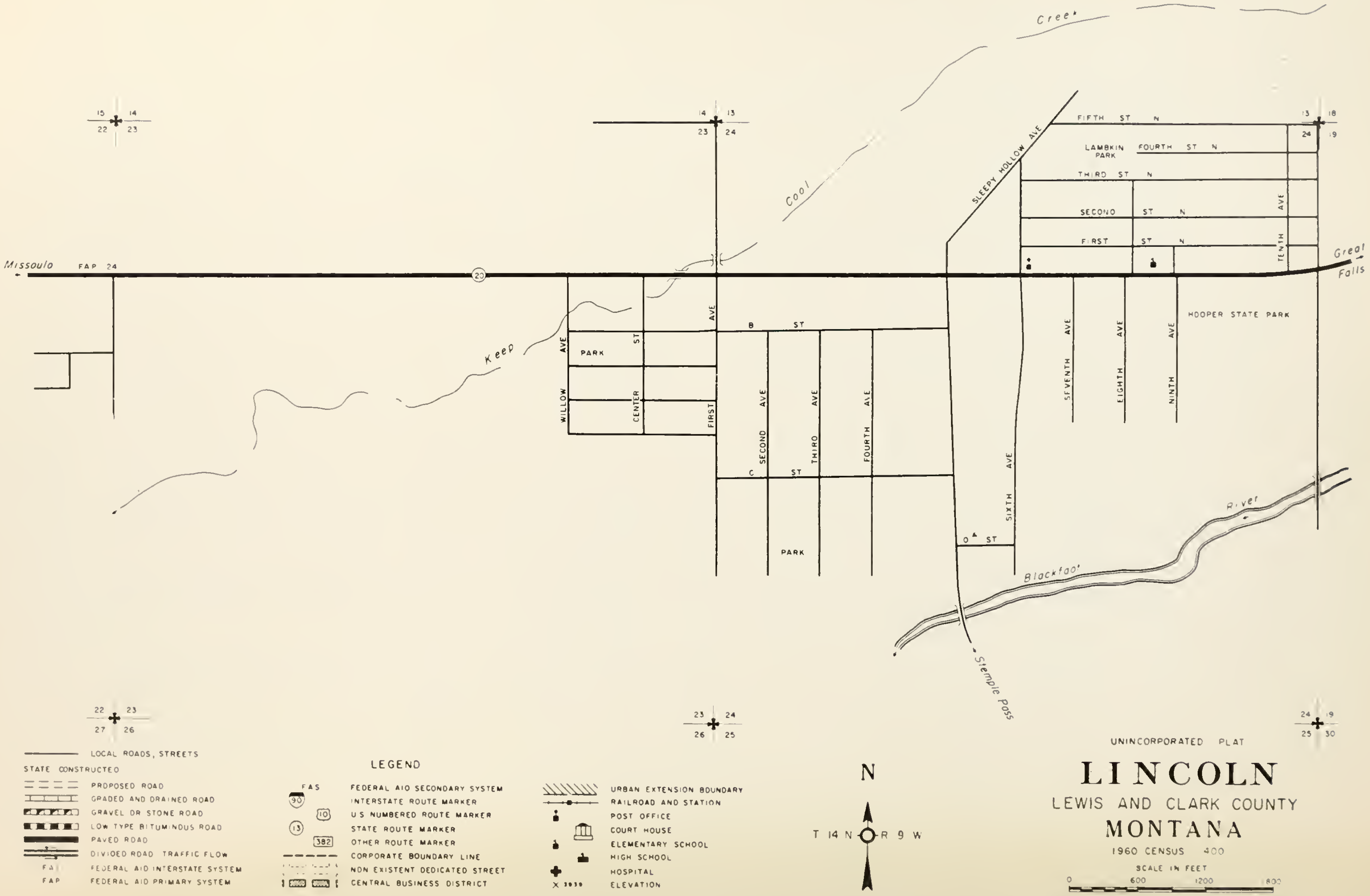

UNINCORPORATED PLAT
LINCOLN
LEWIS AND CLARK COUNTY
MONTANA
1960 CENSUS 400
SCALE IN FEET
0
600
1200
1800
N
T 14 N
R 9 W
LEGEND
LOCAL ROADS, STREETS
STATE CONSTRUCTED
PROPOSED ROAD
GRADED AND DRAINED ROAD
GRAVEL OR STONE ROAD
LOW TYPE BITUMINOUS ROAD
PAVED ROAD
DIVIDED ROAD TRAFFIC FLOW
FAI FEDERAL AID INTERSTATE SYSTEM
FAP FEDERAL AID PRIMARY SYSTEM
FAS FEDERAL AID SECONDARY SYSTEM
90 INTERSTATE ROUTE MARKER
10 U S NUMBERED ROUTE MARKER
13 STATE ROUTE MARKER
382 OTHER ROUTE MARKER
CORPORATE BOUNDARY LINE
NON EXISTENT DEDICATED STREET
CENTRAL BUSINESS DISTRICT
URBAN EXTENSION BOUNDARY
RAILROAD AND STATION
POST OFFICE
COURT HOUSE
ELEMENTARY SCHOOL
HIGH SCHOOL
HOSPITAL
X 3939 ELEVATION
Missoula
FAP 24
20
Great Falls
Cool Creek
Keep
Blackfoot River
Stemple Pass
SLEEPY HOLLOW AVE
FIFTH ST N
LAMBKIN PARK
FOURTH ST N
THIRD ST N
SECOND ST N
FIRST ST N
TENTH AVE
NINTH AVE
EIGHTH AVE
SEVENTH AVE
SIXTH AVE
HOOPER STATE PARK
D ST
B ST
C ST
FIRST AVE
SECOND AVE
THIRD AVE
FOURTH AVE
PARK
WILLOW AVE
CENTER ST
PARK
15 14 22 23
14 13 23 24
13 18 24 19
22 23 27 26
23 24 26 25
24 19 25 30

Exhibit 15.

TRAFFIC VOLUMES ON MONTANA 20
ONE MILE EAST OF LINCOLN
1965

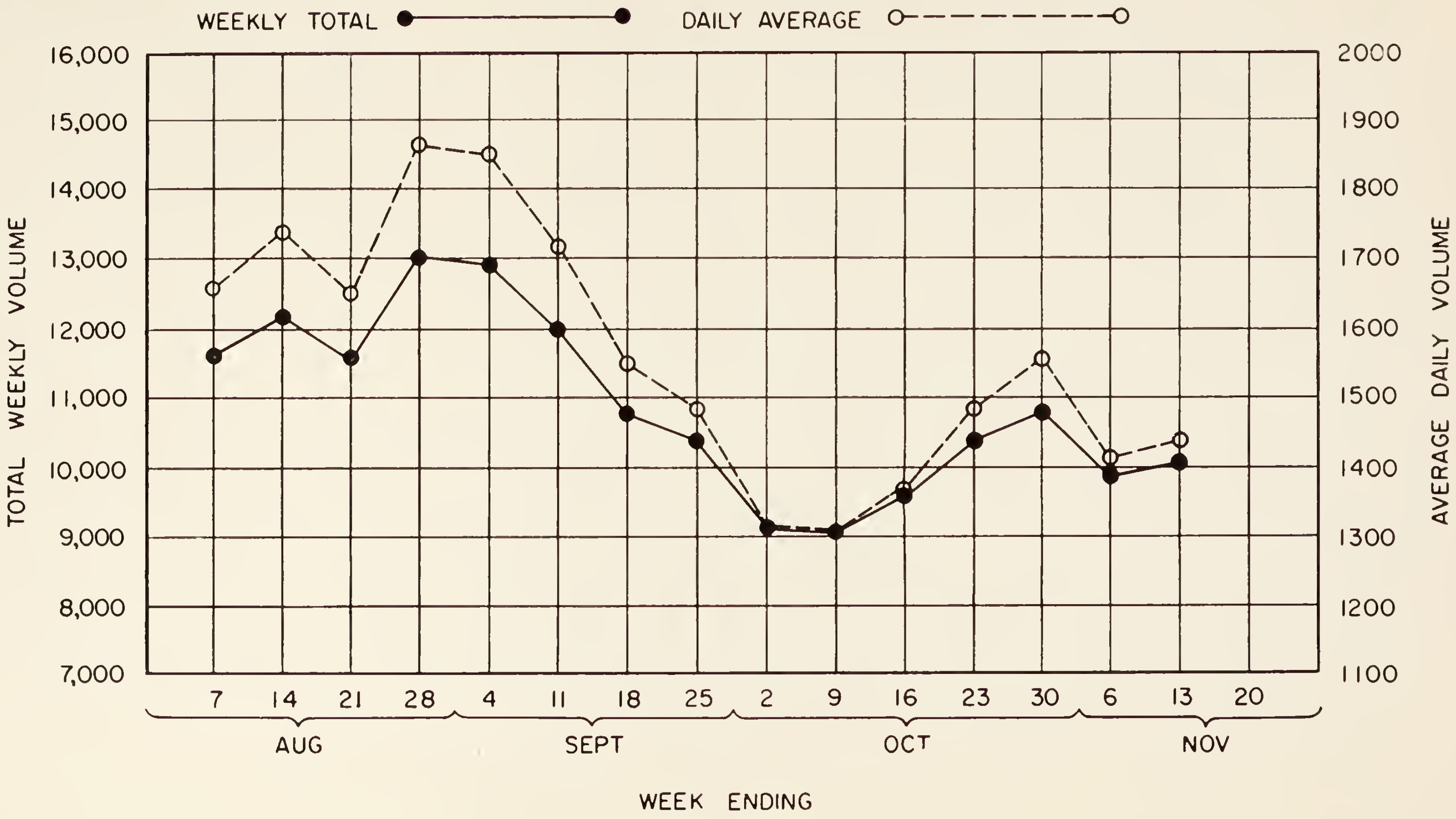


Exhibit 16.

It will be noted that the peak volume was attained during the latter part of August and the Labor Day weekend for September. After that there is a steady decline until the early part of October which represents a 31 percent decline in the total volume. After the week ending October 4th there is an upturn which fluctuates but does not drop drastically going into November. This is due to the hunting season which occurs at this time. Subsequent to the hunting season there is another decline in traffic volume (not shown in the data or graph).

During the above count, a total of 163,976 vehicles passed through the area, which established a daily average of 1,562 vehicles for that period.

Also, a survey was conducted for several days in June and July to determine the origin, type and related volume of traffic coming into the area during the major time intervals of the day. Fifteen hours were ultimately covered by the shifting crews assigned to take the information at different locations. The information was taken on State Highway Commission Planning Survey Traffic Sheet (shown in the Appendix). The two time intervals chosen, which spanned the major portion of the day, were from 6:00 a.m. to 2:00 p.m. and from 2:00 p.m. to 9:00 p.m.

Table 21 shows the results of the traffic survey, which were averaged-out for that period. Thus, each vehicle class is depicted in terms of its average daily volume and percent representation of the total traffic volume under survey.

Table 21
TYPE AND AVERAGE NUMBER OF VEHICLES DETERMINED FROM SURVEY

	Month of July		Month of June	
	Daily Average	Percent	Daily Average	Percent
Trucks:				
Full Trailer	11	2.1	10	2.3
Semi-Trailer	37	6.9	24	5.6
Single Units*	129	24.1	93	21.6
SUBTOTAL:	177	33.0	127	29.5
Passenger Cars:				
Out-of-State	109	20.3	96	22.3
Montana	250	46.7	207	48.2
SUBTOTAL:	359	67.0	303	70.5
GRAND TOTAL:	536	100.0	430	100.0

Includes light panels and pickups.

Toward the latter part of August and correlative with the count data revealed, the average daily vehicles by type and in total volume would be expected to increase; and after that period, a steady decline to follow until the interruption associated with the hunting season—after which the decline would continue to its low limit at the ebb of the winter season. In conjunction with this final decline, it has been shown that the decrease in passenger car traffic is proportionately greater than for trucks, so on the basis of a weighted average, the percentage for trucks would be slightly higher.

SCHOOL CENSUS AND ENROLLMENT

The October 1965 County School Census for Lincoln District 38 showed 174 children between the ages of six and twenty-one, and 225 under twenty-one. The significance of this census is that each school district receives money from the state's interest and income fund for all children from six to twenty-one years of age.

In 1964 there were 236 children under twenty-one of whom 152 were in the school-age fund. Table 22 shows the Lincoln School District 38 enrollment since 1953.

Table 22
LINCOLN SCHOOL DISTRICT 38 ENROLLMENT SINCE 1953

Year	Enrollment	Percent Change	Index (1958 Base)
1953	56	......	64.4
1954	42	—25.0%	48.3
1955	60	+42.9	69.0
1956	70	+16.6	80.5
1957	67	— 4.3	77.0
1958	87	+29.8	100.0
1959	82	— 5.8	94.3
1960	90	+ 9.8	103.4
1961	97	+ 7.8	115.5
1962	97	0.0	115.5
1963	108	+11.4	124.1
1964	114	+ 5.6	131.0
1965	121	+ 6.1	139.0

Although growth of the community is reflected from the increasing enrollment figures (e.g., 116.1 percent increase since 1953), Lincoln is faced with a serious problem concerning not only children of high school age, but their families as well.

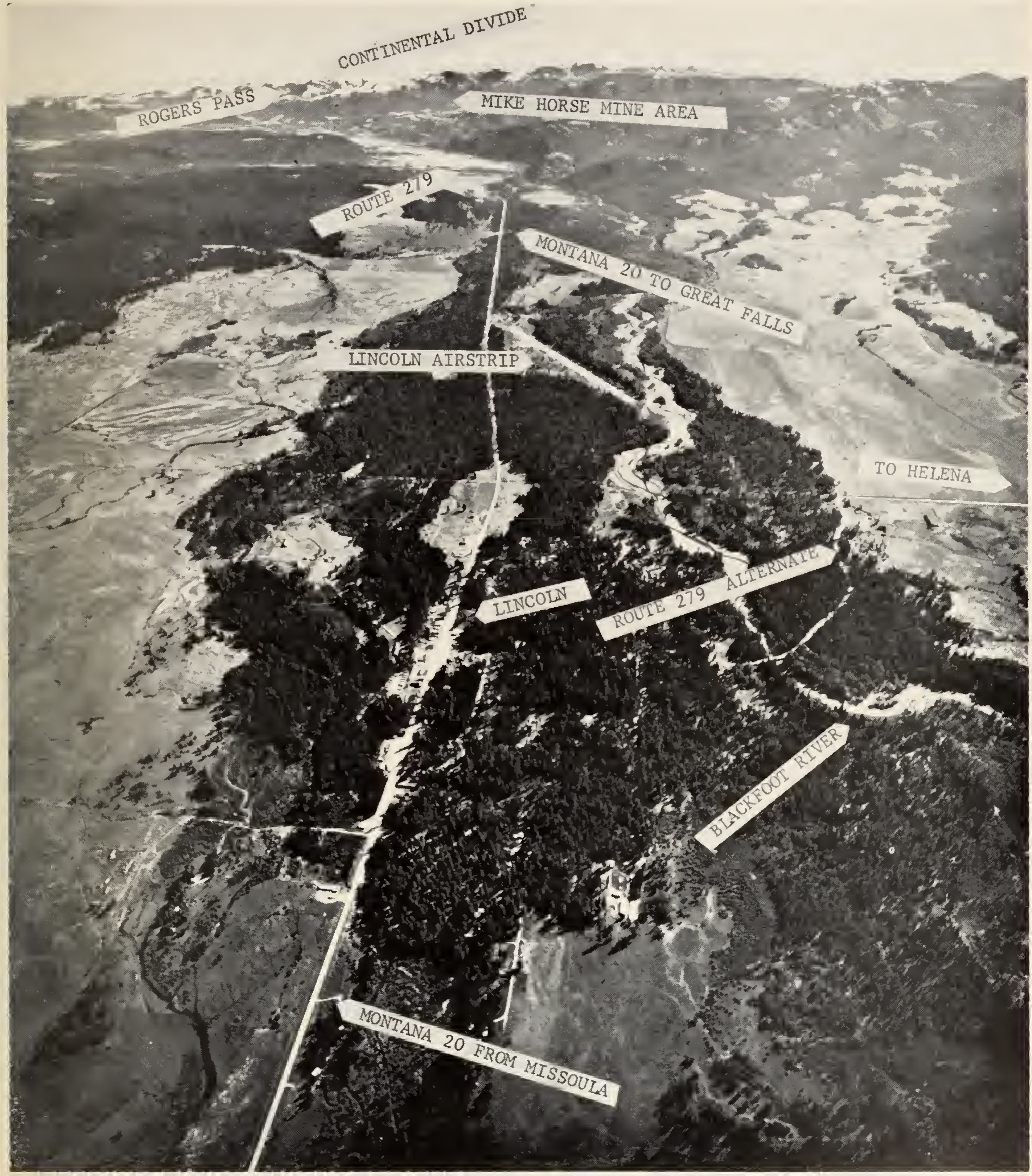
The lack of a high school in the immediate area has meant dependence on the Augusta high school some seventy miles from Lincoln. Since school bus service is out of question for this distance, boarding arrangements in Augusta have to be utilized. Such accommodations are usually expensive and create family disunity.

As a result very few families whose children are about to reach high school age remain in Lincoln. Interviews showed that families confronted with this problem were already making plans for relocation to areas which would provide employment and a necessary high school education.

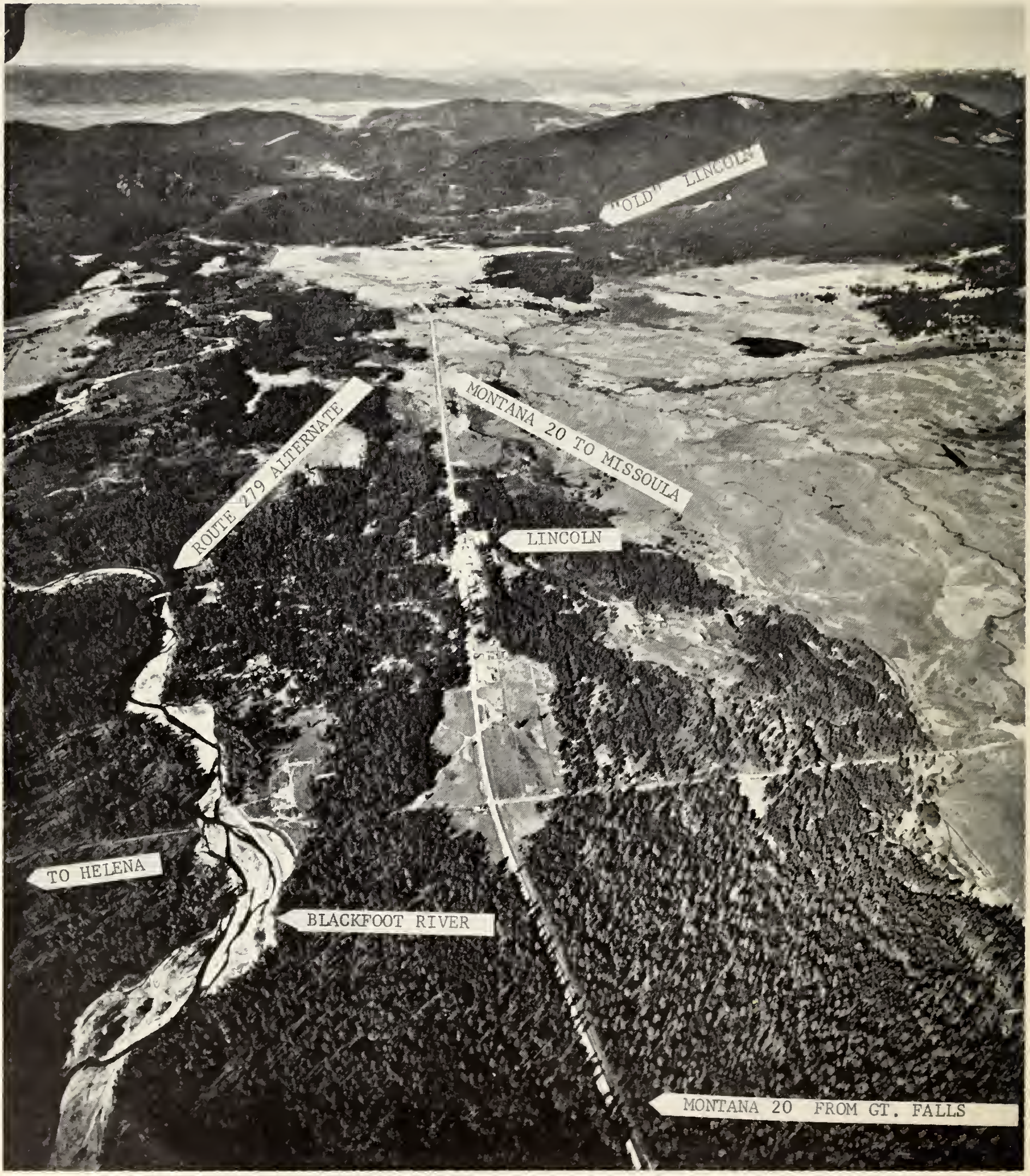
FOOTNOTES

1. Herman Schreiber, *Merchants, Pilgrims and Highwaymen,* (New York, G. P. Putnam's Sons, 1961), p. 115.
2. Ibid.
3. Bernard DeVoto, "The American Road," *Freedom of the American Road,* Ford Motor Company, 1956, p. 7.
4. Floyd I. Thiel, "Social Effects of Modern Highway Transportation," Public Roads, Vol. 32, No. 1, p. 8.
5. Ibid. pp. 8-9.
6. J. R. M. Culp, "From Incidents in the Life of His Father, David W. Culp As Told by Him and His Wife," Montana Historical Society, October 1964, (Unpublished Manuscript), p. 2.
7. Ibid., p. 5.
8. J. T. Pardee and F. C. Schrader, *Metalliferous Deposits of the Greater Helena Mining Region Montana,* Bulletin 842, U. S. Government Printing Office, Washington, 1933, p. 115.
9. *Montana Post,* May 4, 1867 (Montana Historical Society File), p. 3.
10. Mrs. Francis McKnight, "Mines and Mining West of the Rocky Mountains," Lincoln, Montana, Historical Notes (Unpublished Manuscripts), p. 2.
11. Clayborn J. Anders, "Lincoln Long Forgotten Gold Camp," Montana Historical Society, 1953, (Unpublished Manuscript), p. 5.
12. McKnight, *op cit.,* p. 3.
13. Ibid. p. 5.
14. Ibid.
15. Pardee and Schrader, *op. cit.,* p. 115.
16. Ibid.
17. Federal Writers Project, W.P.A., "Montana A State Guide book," Hastings, New York, 1949, pp. 307-8.
18. Pardee and Schrader, *op. cit.,* p. 115.
20. Ibid., p. 6.
19. Ibid., pp. 1-2.
20. Ibid., p. 6.
21. Ibid., p. 7.
22. Ibid., p. 94.
23. Ibid.
24. Ibid.
25. Ibid., p. 98.
26. Robert E. Miller, "Logging, Recreation Booming in Lincoln Community" *Independent Record,* October 15, 1961, sec. 2, p. 1.
27. Vern Hamre, (Mimeographed Letter Report), Helena National Forest, Forest Service, U. S. Department of Agriculture, No. 2400 Timber, October 1960, p. 1.
28. Ibid., p. 2.
29. Ibid., Attachment "A".
30. Ibid.
31. Montana State Planning Board, "Lincoln," *Montana Directory of Manufacturers and Buyers Guide,* 1965-1966, p. 22.
32. Miller, *op. cit.*
33. Hamre, op. cit., *p.* F.
34. U.S.D.A., Forest Service, *Annual Statistical Report,* Reports 1958-1964.
35. Kim Larson, "Aspen Grove Campground Near Lincoln Visited By 10,000 Persons Annually," Independent Record, May 16, 1965.
36. U.S.D.A., Forest Service, *Wildlife Report,* FSM 2664, 1965.
37. William G. Adkins, *Economic Effect of the Camp Creek Road Improvement,* College Station, Texas, 1958, p. 12.
38. Ibid.
39. Ernest Immel, "Drive To Finish Central Montana Highway Is Started At Convention Held In Sidney," *Great Falls Tribune,* May 28, 1936, p. 1.
40. "New Signs for No. 20 Central Montana Highway Is Now Border To Border," *Independent Record,* September 28, 1965.
41. Technical Committee of Industrial Classification, *Standard Industrial Classification Manual,* Office of Statistical Standards, U. S. Government Printing Office, Washington, 1957.
42. "Up 3.41 Percent, County's Taxable Valuation for 1965 Is $30 Million," *Independent Record,* July 12, 1965.

APPENDIX



Eastward view of Lincoln, Montana with highway Montana 20 passing through from Missoula headed for Great Falls via Rogers Pass on the Continental Divide. Area of the Mike Horse mine is approximately shown. Route 279 toward Helena via Flesher Pass is also approximately indicated. The Lincoln airstrip can be readily seen toward the right of the highway.



Westward view of Lincoln, Montana with highway Montana 20 passing through from Great Falls headed toward Missoula. Blackfoot River is visible in the lower left and route 279 alternate headed toward Helena via Stemple Pass. "Old" Lincoln townsite is shown approximately.

Table I

DATA AND INFORMATION SOURCES

	SOURCE	TYPE OF INFORMATION
1.	Lincoln Helena Telephone Co.	Telephone Installations
2.	Montana Power Company	Power Line Installations
3.	Montana Petroleum Association	Gasoline Gallonage
4.	Helena Abstract and Title Co.	Real Estate Sales
5.	The Great Falls Tribune	Montana 20 Development
6.	Independent Record	Lincoln Community News Items
7.	Forest Service, Department of Agriculture	Timber Resources, Lumber Industry, Recreation
8.	Montana Historical Society	History of Lincoln
9.	Montana State Planning Board	Manufacturing and Other Industries in Montana
10.	Montana Unemployment Compensation Commission	Employment and Wage Statistics (nondisclosure basis)
12.	Board of Equalization	
13.	State Board of Health	Cafeterias, Motels, Bars and other Licensed Businesses.
14.	Board of Railroad Commissioners	Intra State Trucking
15.	Lewis and Clark County Tax Assessor	Property Tax Information
16.	County School Board	Enrollment
17.	U. S. Post Office, Lincoln	Number of Addresses and Residents
18.	Interstate Commerce Commission	Interstate Trucking
19.	U. S. Department of Commerce, Census Bureau	Census Information for Montana, Lincoln Area
20.	U. S. Department of Commerce, Bureau of Public Roads	Highway Reports
21.	Montana State Highway Commission	Highway Statistics and Construction Data
22.	Lincoln Residents, Others	General Information and Interview Material

Table II

ECONOMIC ANALYSIS OF SELECTED INDUSTRIES FOR COMMUNITY OF LINCOLN IN LEWIS & CLARK COUNTY – 1955-1965

	INDUSTRY 24 Lumber & Wood Products		INDUSTRY 55 Auto Dealers & Service Stations		INDUSTRY 58 Retail and Drinking Places		INDUSTRY 70 Hotels, Rooming Houses, Camps & Lodging Places	
Year	Ave. No. Monthly Employees	Total Yearly Wages	Ave. No. Monthly Employees	Total Yearly Wages	Ave. No. Monthly Employees	Total Yearly Wages	Ave. No. Monthly Employees	Total Yearly Wages
1955	15	$ 69,072					6	$10,620
1956	12	35,642			1	$ 4,338	7	14,504
1957	11	47,936			3	8,850	6	12,589
1958	34	115,928	1	$ 575	9	16,172	6	11,550
1959	46	178,819	3	8,868	9	21,515	6	13,203
1960	51	228,510	2	8,510	14	24,269	9	18,587
1961	38	148,846	2	5,193	12	28,261	8	13,924
1962	67	283,051	2	5,770	12	32,437	9	24,926
1963	62	286,766	4	8,066	14	37,185	10	24,947
1964	57	257,989	4	9,296	17	46,383	10	28,002
**1965	55	115,006	3	4,197	17	26,065	8	9,200

**First six months only.

PERSONAL QUESTIONNAIRE

ECONOMIC SURVEY QUESTIONNAIRE
LINCOLN AREA STUDY

NO. ____________

(CONFIDENTIAL INFORMATION)

NAME: ____________ PERMANENT RESIDENCE: ____________

AGE: ______ MARITAL STATUS ______ NO. DEPENDENTS: ______ CHILDREN: ______

SCHOOL AGE CHILDREN: ______ ATTENDING GRADE SCHOOL: ______ HIGH SCHOOL: ______

OCCUPATION: ____________ EMPLOYER: ____________

WIFE'S OCCUPATION: ____________ EMPLOYER: ____________

GROSS ANNUAL FAM. INC. ______ AVE. FAM. MONTHLY INC. ______ WINTER ______ SUMMER ______

OWN HOME: ______ MORTGAGE: ______ RENT HOME: ______ MARKET VALUE OF HOME: ______

WHEN PURCHASED: ______ INPROVEMENTS: ______ WHEN: ______ VALUE: ______

OTHER REAL PROPERTY INVESTMENT: ____________ WHEN: ______ VALUE: ______

HOW LONG RESIDENT OF LINCOLN: ______ WHERE FROM ORIGINALLY: ____________

WHAT MOTIVATED YOU TO COME TO LINCOLN: ____________

REMARKS: ____________

EXHIBIT I

BUSINESS QUESTIONNAIRE

ECONOMIC SURVEY QUESTIONNAIRE
LINCOLN AREA STUDY

NO.________________

(CONFIDENTIAL INFORMATION)

NAME:________________ PERMANENT RESIDENCE:________________

AGE:________ MARITAL STATUS ________ NO. DEPENDENTS:________ CHILDREN:________

SCHOOL AGE CHILDREN:______ ATTENDING GRADE SCHOOL: ______ HIGH SCHOOL: ________

OCCUPATION:________________ EMPLOYER: ________________

WIFE'S OCCUPATION: ________________ EMPLOYER: ________________

GROSS ANNUAL FAM. INC.________ AVE. FAM. MONTHLY INC.______ WINTER____ SUMMER_____

OWN HOME:________ MORTGAGE:________ RENT HOME:_______ MARKET VALUE OF HOME:________

WHEN PURCHASED:__________ INPROVEMENTS:__________ WHEN:__________ VALUE: _____

OTHER REAL PROPERTY INVESTMENT:________________ WHEN:__________ VALUE:_____

HOW LONG RESIDENT OF LINCOLN:__________ WHERE FROM ORIGINALLY:________________

WHAT MOTIVATED YOU TO COME TO LINCOLN: ________________________________

REMARKS:____

EXHIBIT II

CITY OR PLACE ______ 1 2 3 4 ☐☐☐☐

HWY ______ DIRECTION ______ 5 6 7 8 ☐☐☐☐

DATE ______ 9 10 11 12 13 14 ☐☐☐☐☐☐

16 17 ☐☐

MONTANA STATE HIGHWAY COMMISSION
PLANNING SURVEY

ORIGIN & DESTINATION FIELD SHEET

EXTERNAL STATIONS

RECORDER ______

DIRECTION OF TRAVEL ______ 15 ☐

HOUR BEGINNING 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

VEH TYPE		REGISTRATION		NO IN CAR	WHERE DID THIS TRIP BEGIN TODAY	WHERE WILL THIS TRIP END TODAY	WHERE WAS YOUR LAST STOP	WHERE WILL YOU STOP NEXT	ROUTE USED TO ENTER AREA
PASS CARS PICKUPS	OTHER TRUCKS	MONT COUNTY	FOREIGN						
18 ☐		19 20 ☐☐		21 ☐	22 25 ☐☐☐☐	26 29 ☐☐☐☐	30 33 ☐☐☐☐	34 37 ☐☐☐☐	38 41 ☐☐☐☐
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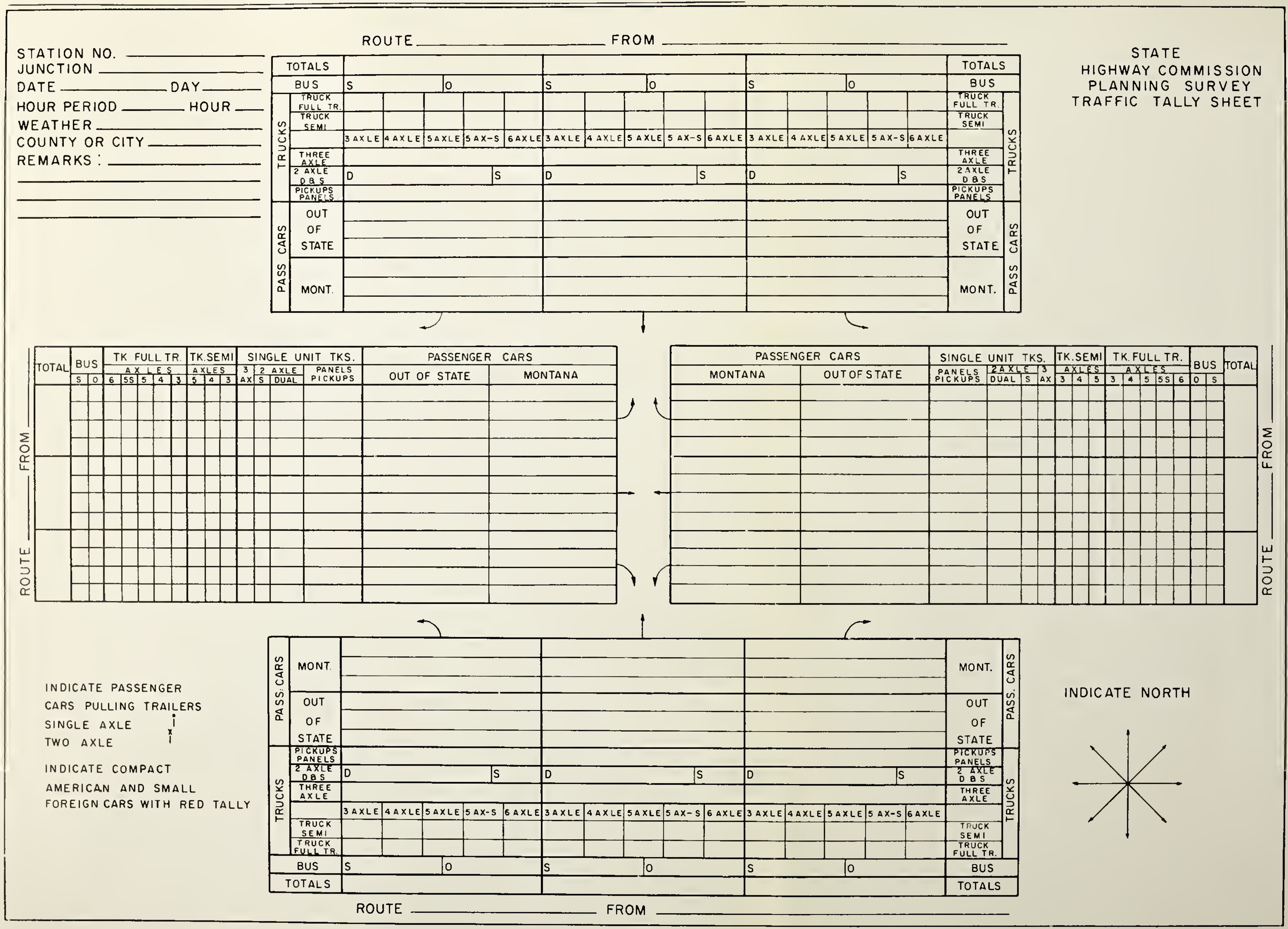
EXHIBIT III



STATE
HIGHWAY COMMISSION
PLANNING SURVEY
TRAFFIC TALLY SHEET

STATION NO. ____
JUNCTION ____
DATE ____ DAY ____
HOUR PERIOD ____ HOUR ____
WEATHER ____
COUNTY OR CITY ____
REMARKS: ____

ROUTE ____ FROM ____

TOTALS																TOTALS
BUS	S		O			S		O			S		O			BUS
TRUCKS: TRUCK FULL TR.																TRUCK FULL TR.
TRUCK SEMI																TRUCK SEMI
	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	TRUCKS
THREE AXLE																THREE AXLE
2 AXLE D & S	D			S		D			S		D			S		2 AXLE D & S
PICKUPS PANELS																PICKUPS PANELS
PASS CARS: OUT OF STATE																OUT OF STATE PASS CARS
MONT.																MONT.

ROUTE —— FROM

TOTAL	BUS		TK FULL TR. AXLES					TK.SEMI AXLES			SINGLE UNIT TKS.				PASSENGER CARS	
	S	O	6	5S	5	4	3	5	4	3	3 AX	2 AXLE S	2 AXLE DUAL	PANELS PICKUPS	OUT OF STATE	MONTANA

FROM —— ROUTE

PASSENGER CARS		SINGLE UNIT TKS.				TK.SEMI AXLES			TK. FULL TR. AXLES					BUS		TOTAL
MONTANA	OUT OF STATE	PANELS PICKUPS	2 AXLE DUAL	2 AXLE S	3 AX	3	4	5	3	4	5	5S	6	O	S	

PASS. CARS: MONT.																MONT. PASS. CARS
OUT OF STATE																OUT OF STATE
TRUCKS: PICKUPS PANELS																PICKUPS PANELS
2 AXLE D & S	D			S		D			S		D			S		2 AXLE D & S
THREE AXLE																THREE AXLE
	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	3 AXLE	4 AXLE	5 AXLE	5 AX-S	6 AXLE	TRUCKS
TRUCK SEMI																TRUCK SEMI
TRUCK FULL TR.																TRUCK FULL TR.
BUS	S		O			S		O			S		O			BUS
TOTALS																TOTALS

ROUTE ____ FROM ____

INDICATE PASSENGER
CARS PULLING TRAILERS
SINGLE AXLE
TWO AXLE

INDICATE COMPACT
AMERICAN AND SMALL
FOREIGN CARS WITH RED TALLY

INDICATE NORTH

EXHIBIT IV